Appl. No. 10/005,876, Filed. December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit. 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid

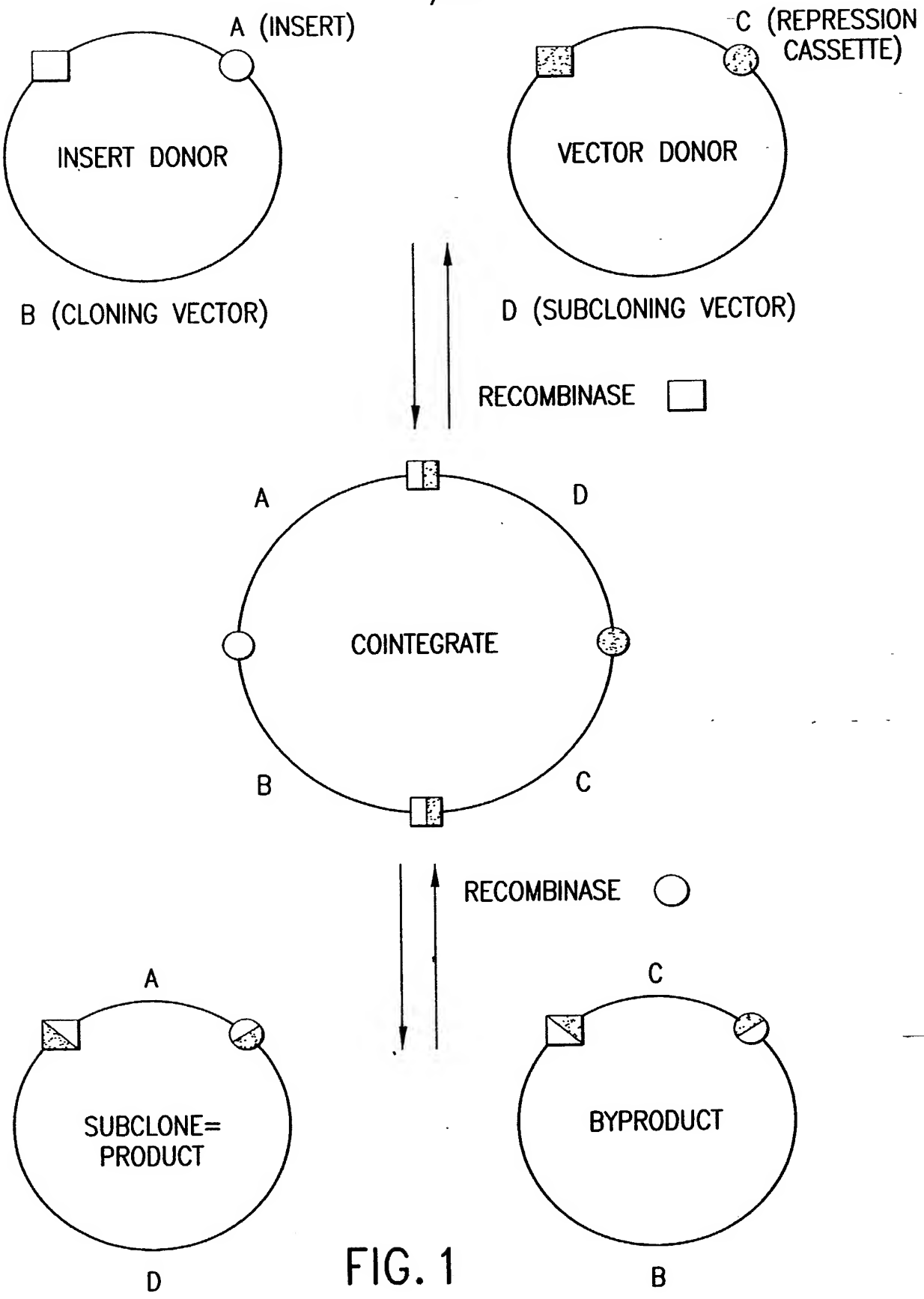


FIG. 1

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit. 1645
Inventor(s) Chesnut *et al.*; Tel. 202/371-2600
Title. Method and Compositions for Synthesis of Nucleic Acid

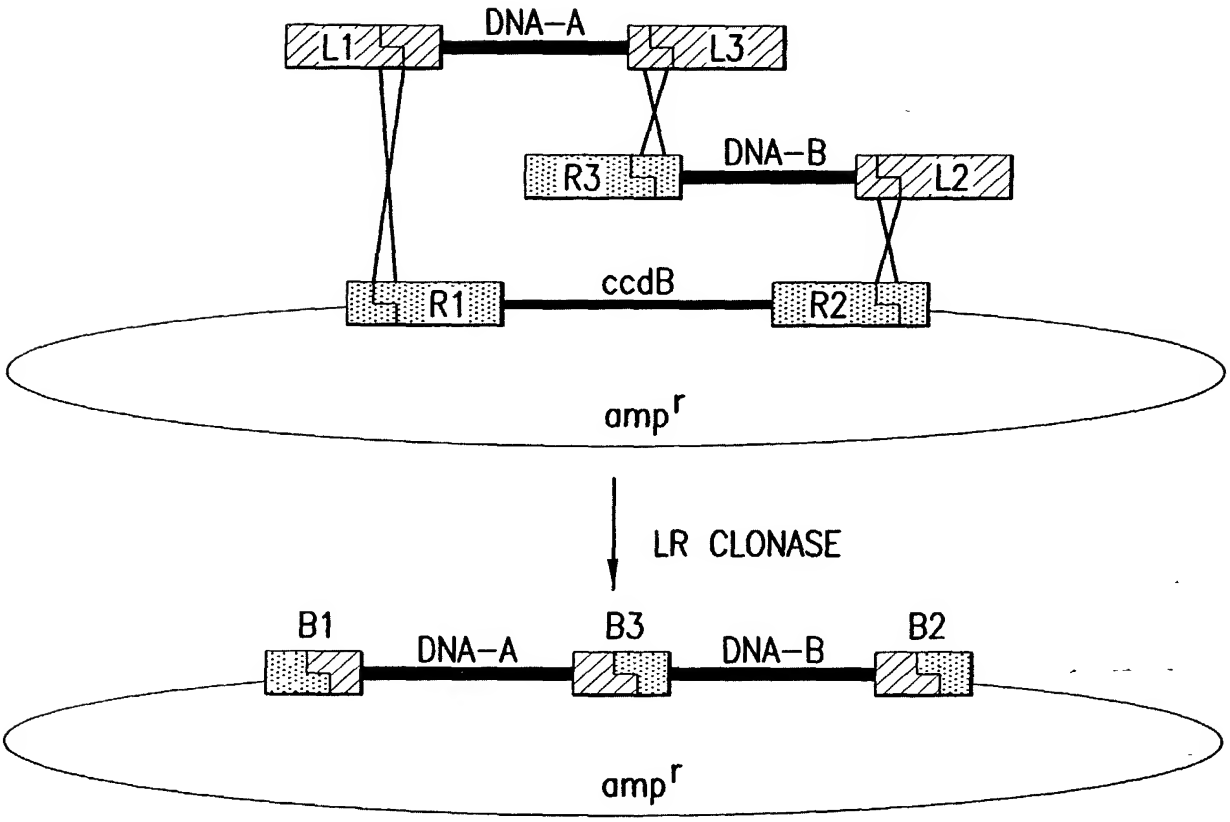


FIG. 2

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

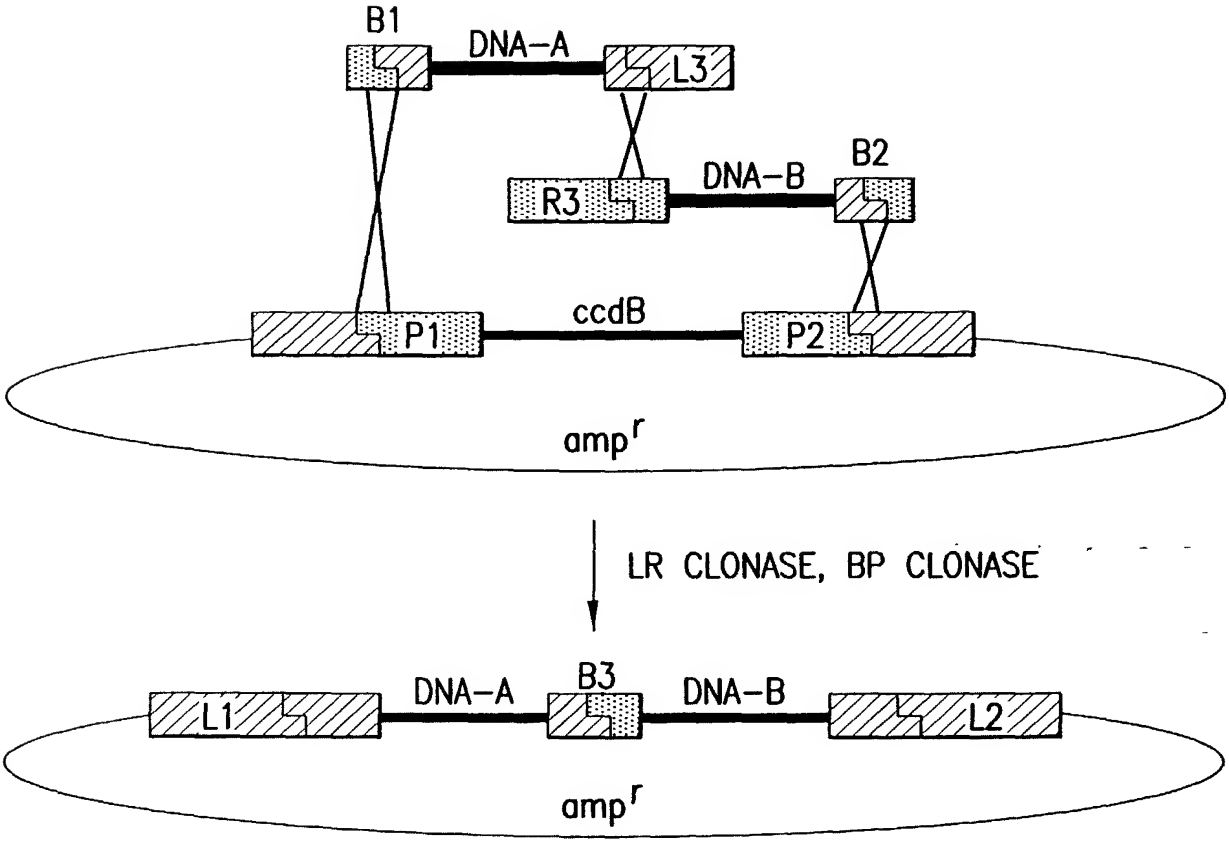


FIG. 3

Appl. No. 10/005,876, Filed. December 7, 2001
Dkt. No. 0942 5340002/RWE/BJD; Group Art Unit. 1645
Inventor(s). Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid .

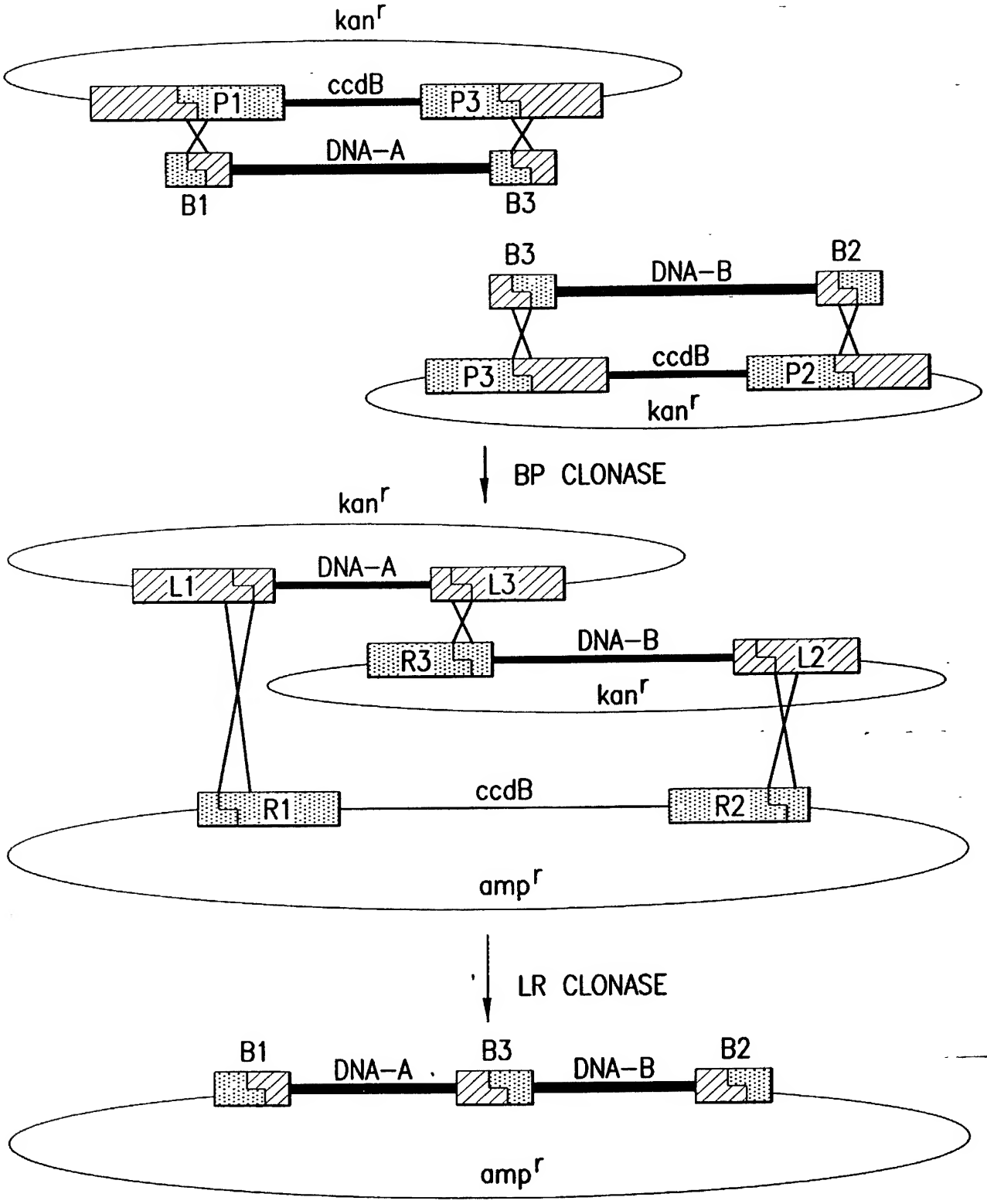


FIG. 4

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD, Group Art Unit: 1645
Inventor(s) Chesnut *et al.*; Tel· 202/371-2600
Title· Method and Compositions for Synthesis of Nucleic Acid. .

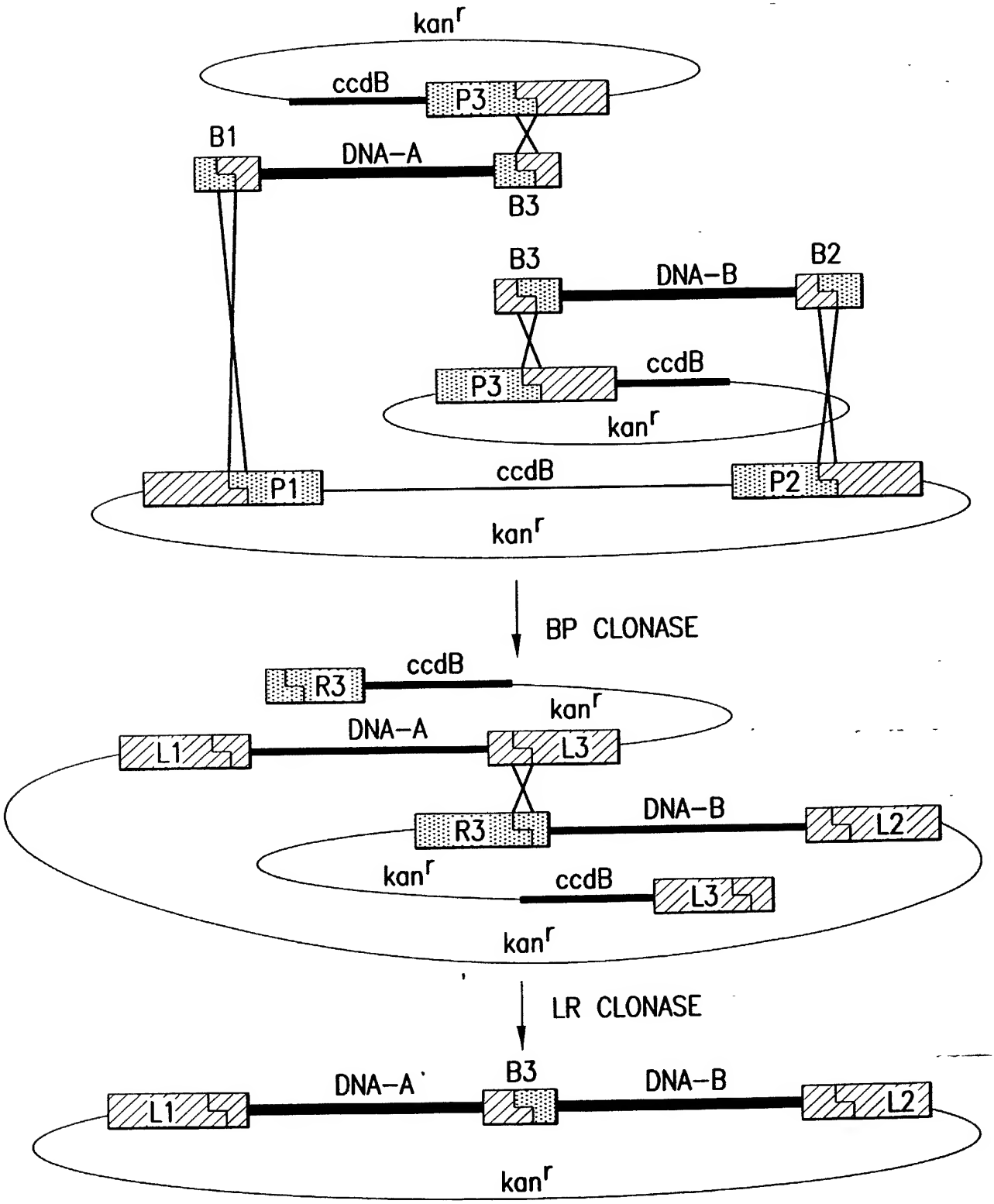


FIG. 5

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt No. 0942.5340002/RWE/BJD; Group Art Unit. 1645
Inventor(s). Chesnut *et al* , Tel· 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

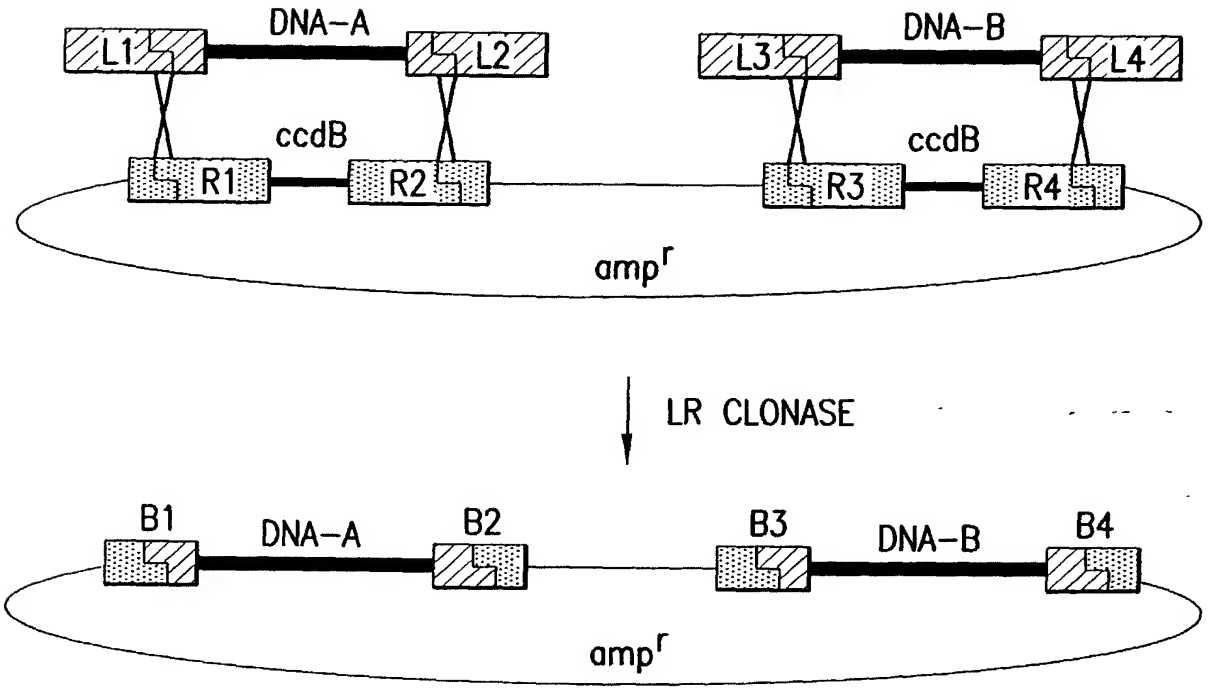


FIG. 6

Appl No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al*; Tel: 202/371-2600
Title. Method and Compositions for Synthesis of Nucleic Acid...

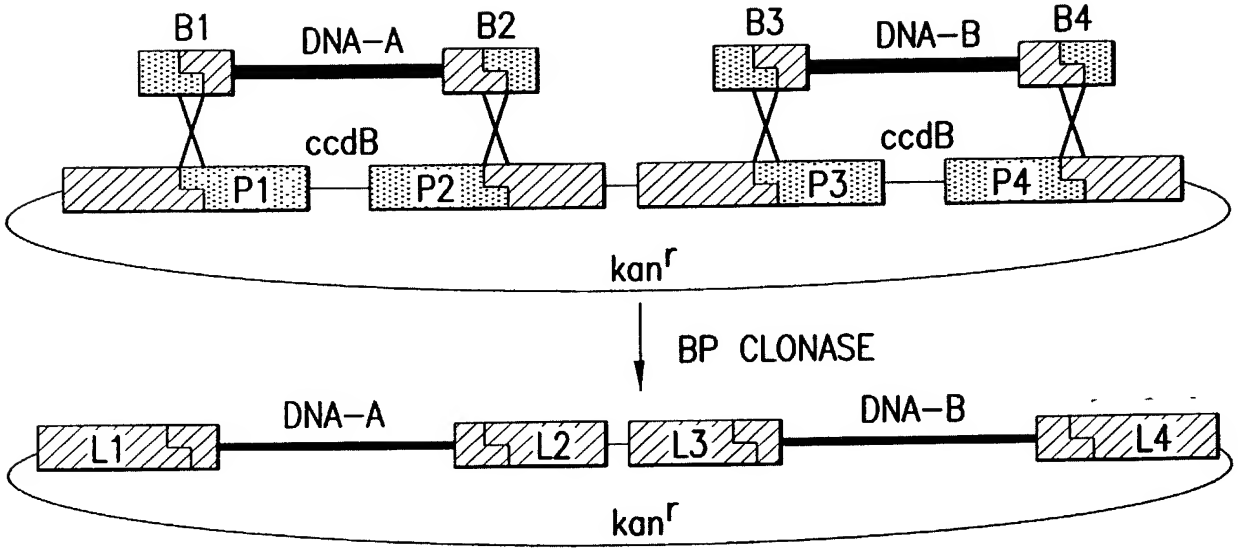


FIG. 7

Appl. No. 10/005,876; Filed. December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al* ; Tel: 202/371-2600
Title. Method and Compositions for Synthesis of Nucleic Acid ..

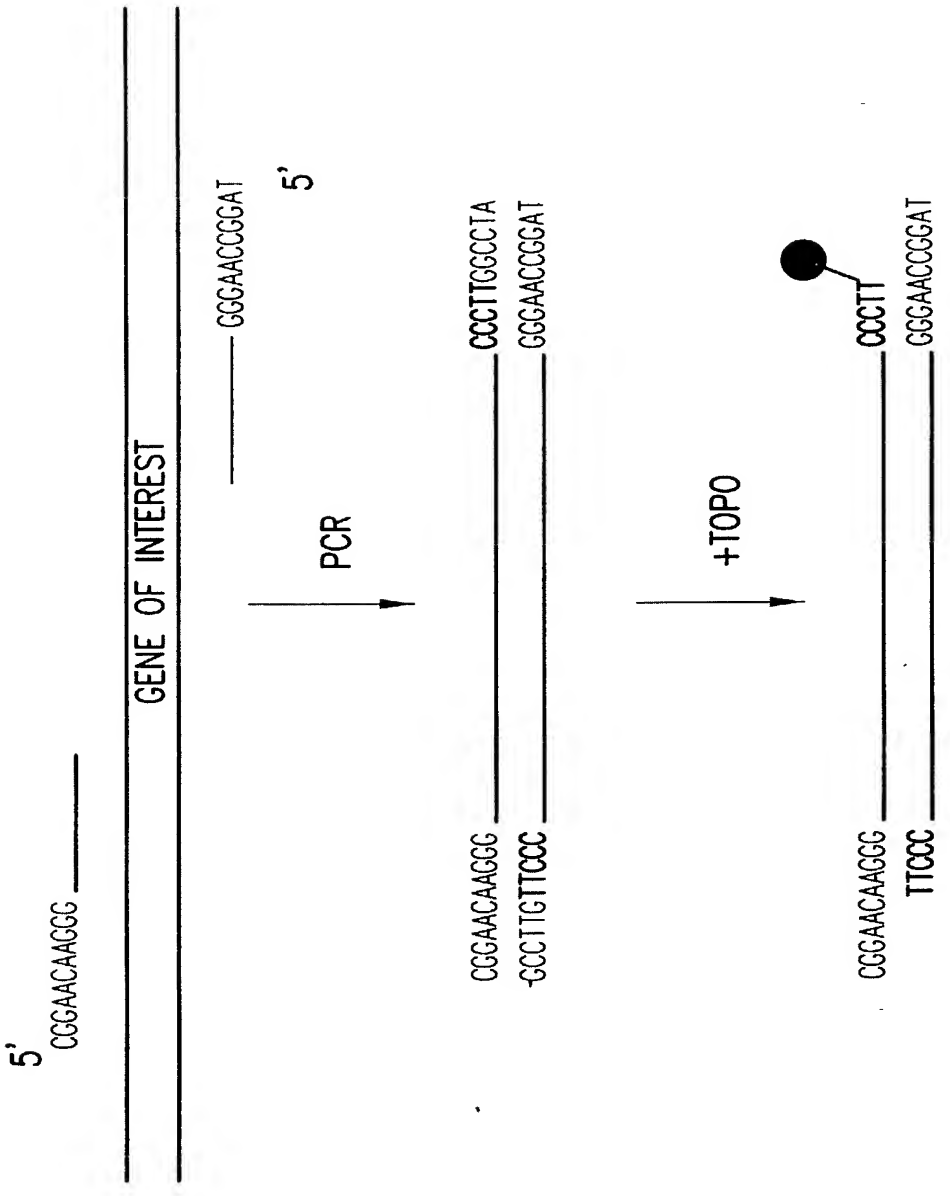


FIG. 8A

Appl No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD, Group Art Unit: 1645
Inventor(s). Chesnut *et al.*, Tel: 202/371-2600
Title. Method and Compositions for Synthesis of Nucleic Acid ..

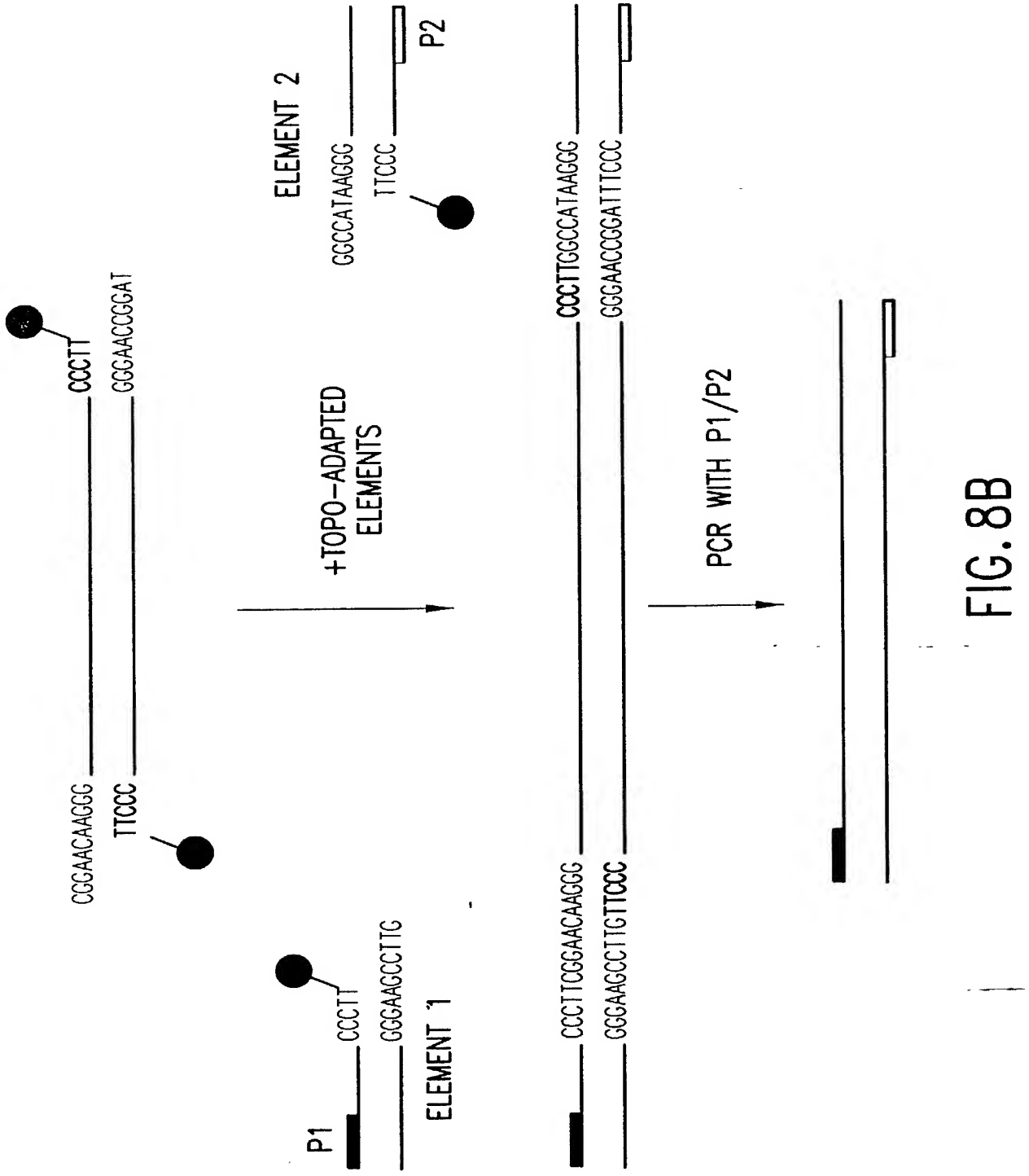


FIG. 8B

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942 534002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

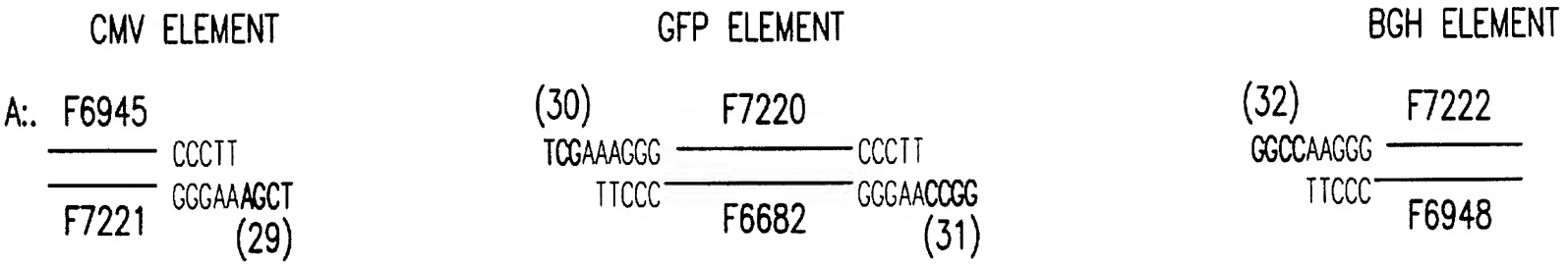


FIG. 9A

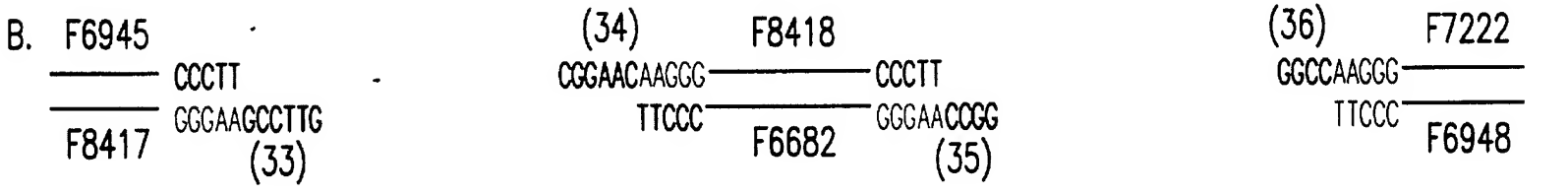


FIG. 9B

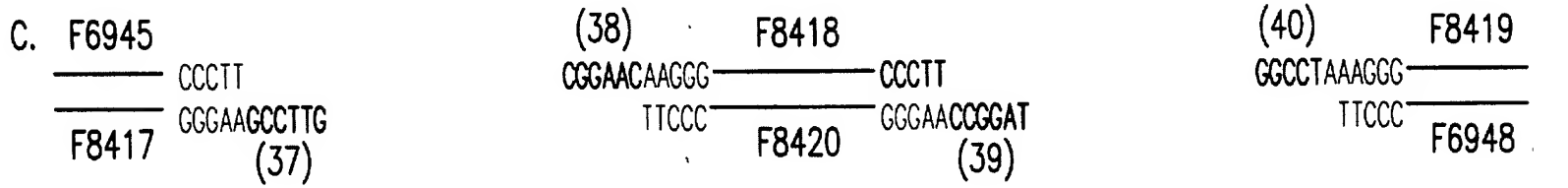


FIG. 9C

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title. Method and Compositions for Synthesis of Nucleic Acid ..

TABLE 1

Primer name	F#	Sequence (5'-> 3')	SEQ ID NO:
MTH1	10779	TATGTATCATACACATACGATTTAGGT	1
MTH2	10780	ACCGCCTCTCCCCGCGCGTT	2
GAL4r2	12667	GTTCCGAAGGGGGCGATACAGTCAACTGTCTTTG	3
MTH5	12505	TTGGCCAAGGGTATCTAGAAGCTTCTGCAGACGCGT	4
VP16r2	12668	GTTCCGAAGGGCCACCGTACTCGTCAATTCCAAG	5
SV40pAf	12016	GGCCAAAAGGGAACTTGTTTATTGCAGCTTATAATG	6
SV40pAr	561	CTCTGACTTGAGCGTCGATTTT	7
p53f2	12669	CGGAACAAGGGGAATTCCCTGTCACCGAGACC	8
SVTf2	12670	CGGAACAAGGGGAATTCCCGGGGATCTGGAATTC	9
CMVr2	7221	TCGAAAGGGTCGAGGTCGACCTGCAGCTG	10
CMVf	6945	AATTCACATTGATTATTGAGTAGTTA	11
GFP-Xhof	7220	TCGAAAGGGTAATGGCCAGCAAAGGAGAAG	12
GFP-Notr	6682	GGCCAAGGGTTTGTAGAGCTCATCCAT	13
BGHf2	7222	GGCCAAGGGTCTGAATGGGGCCGCATAGT	14
BGHr	6948	AAGCCATAGAGCCCGGGCCA	15
CMVr3	8417	GTTCCGAAGGGTCGAGGTCGACCTGCAGCTG	16
GFPf3	8418	CGGAACAAGGGATGGCCAGCAAAGGAGAAG	17
GFPr3	8420	TAGGCCAAGGGTTTGTAGAGCTCATCCATGC	18
BGHf3	8419	GGCCTAAAGGGTGAATGGGGCCGCATAGT	19
T7top	9304	GAAGGAGTAATACGACTCACTATAGGGAGCCACCATGGGCCCTTCGGAAC	20
T7bottom	9305	GTTCCGAAGGGCCCATGGTGGCTCCCTATAGTGAGTCGTATTACTCCTTC	21
T7amp	9306	GAAGGAGTAATACGACTCACT	22
T3top	9661	GGCCTAAAGGGTCCCTTTAGTGAGGGTTAATTGCGCGC	23
T3bottom	9662	GCGCGCAATTAACCCTCACTAAAGGGACCCTTTAGGCC	24
lacZf2	10632	CGGAACAAGGGATGATAGATCCCGTCGTTTTACA	25
lacZ1k2	10770	TAGGCCAAGGGGACCATTTTCAATCCGCACCT	26
lacZ2k2	10771	TAGGCCAAGGGGAGGCACTTCACCGCTTGCCA	27
lacZ3k2	10772	TAGGCCAAGGGTTTGACACCAGACCAACTGGTA	28

FIG. 9D

SAMPLE #	GAL4+pA	VP16+pA	pGene/lacZ	GAL4+p53+pA	VP16+T+pA	p53-VP16
1			0.26 μg	p 0.37 μg	p 0.37 μg	
2			0.4 μg	p 0.3 μg	p 0.3 μg	
3			0.4 μg			p 0.6 μg
4			0.4 μg	10.3 μg	10.3 μg	
5		10.3 μg	0.4 μg	10.3 μg		
6	10.3 μg		0.4 μg		10.3 μg	
7			0.4 μg	4.5 μl PCR	4.5 μl PCR	
8		4.5 μl PCR	0.4 μg	4.5 μl PCR		
9	4.5 μl PCR		0.4 μg		4.5 μl PCR	

FIG. 10A

SAMPLE #	LacZ activity
1	240000
2	140000
3	1800000
4	1400000
5	54000
6	80000
7	320000
8	12000
9	42000

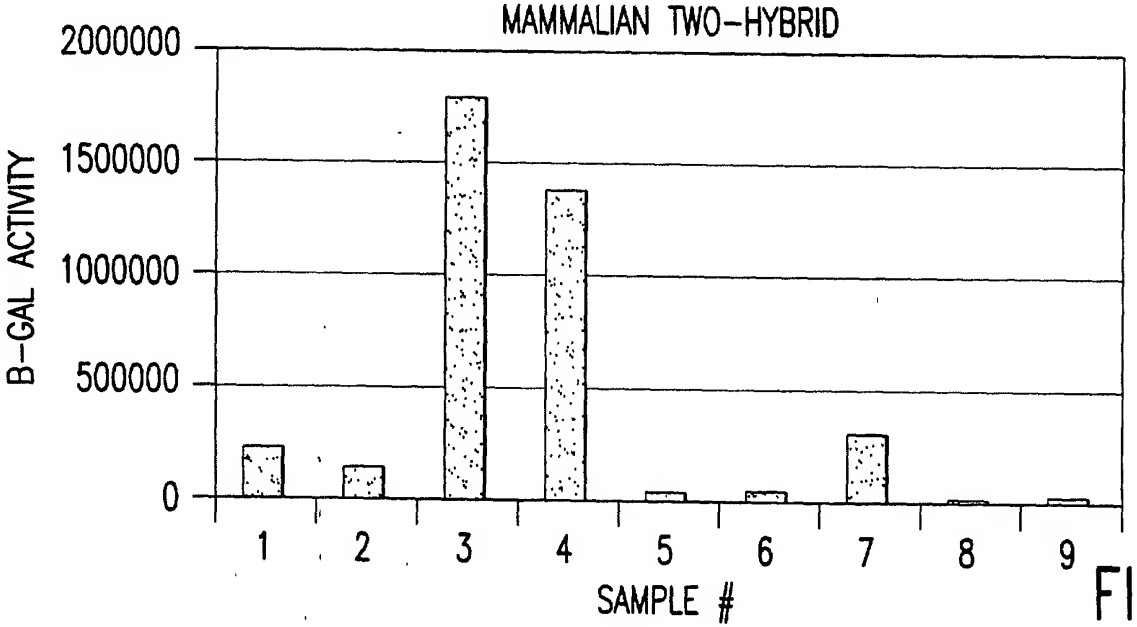


FIG. 10B

Sheet 12 of 49
Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel. 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

Appl. No. 10/005,876, Filed: December 7, 2001
Dkt. No. 0942 5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s). Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

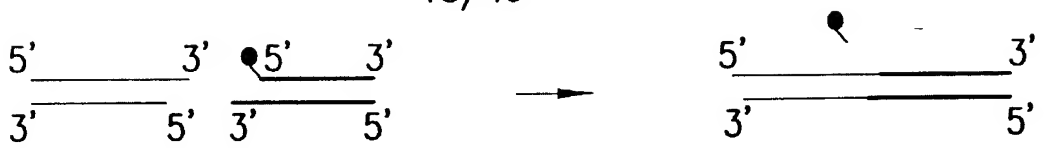


FIG. 11A

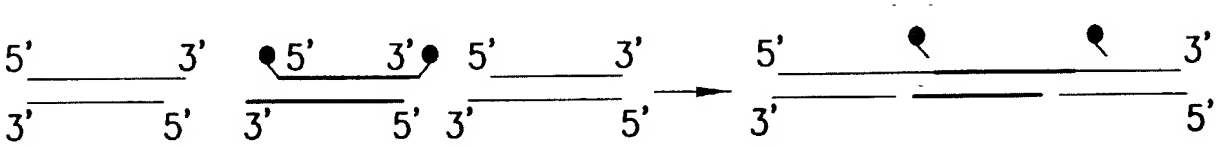


FIG. 11B

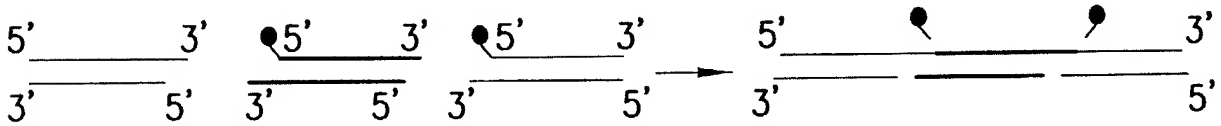


FIG. 11C

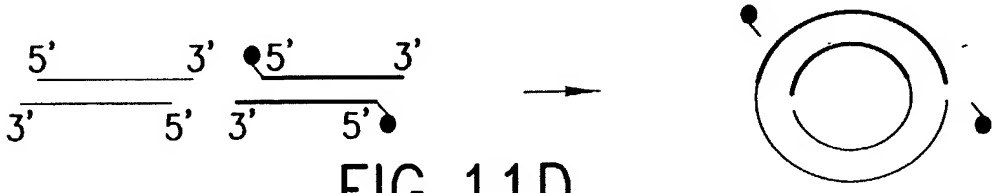


FIG. 11D

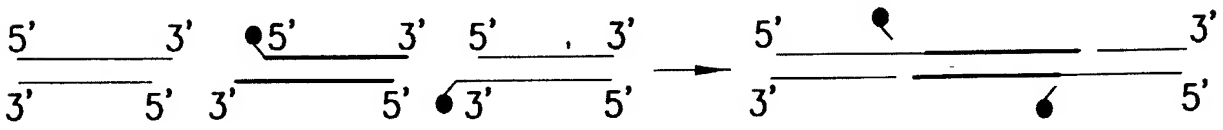


FIG. 11E

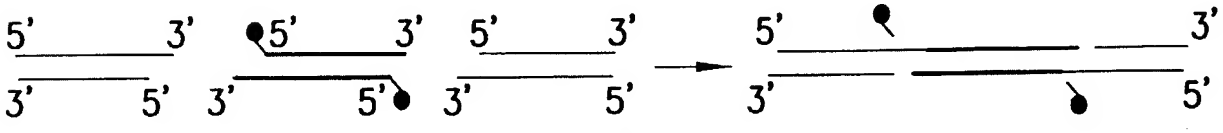


FIG. 11F

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s). Chesnut *et al* ; Tel. 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

FIG. 12A

FIG. 12B

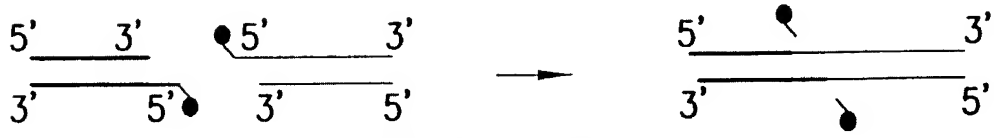


FIG. 12C

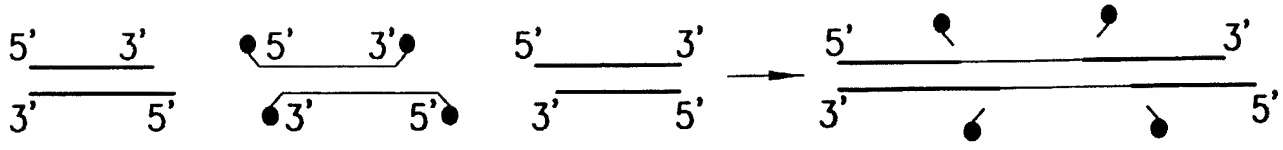


FIG. 12D

Appl. No. 10/005,876, Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title Method and Compositions for Synthesis of Nucleic Acid...

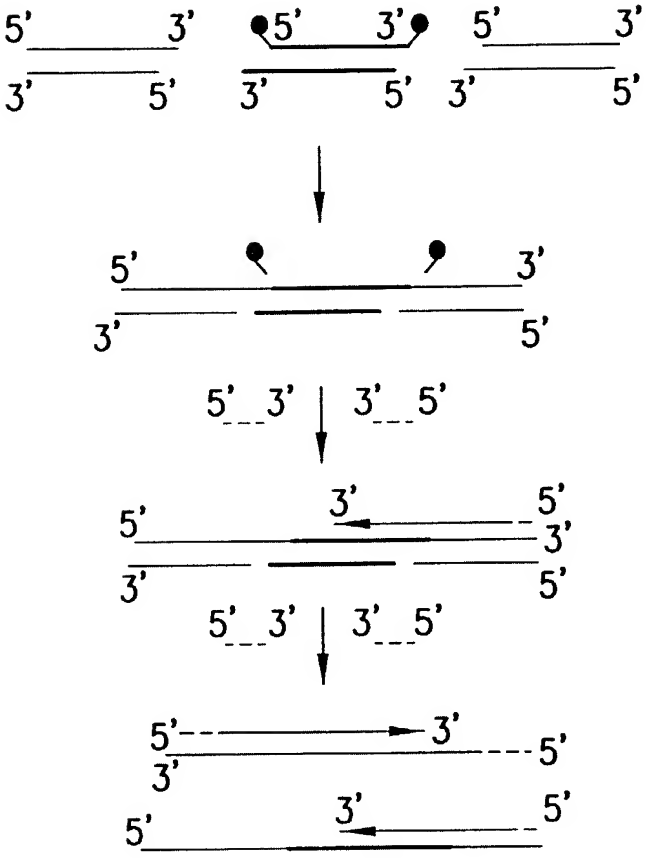


FIG. 13

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD, Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title. Method and Compositions for Synthesis of Nucleic Acid...

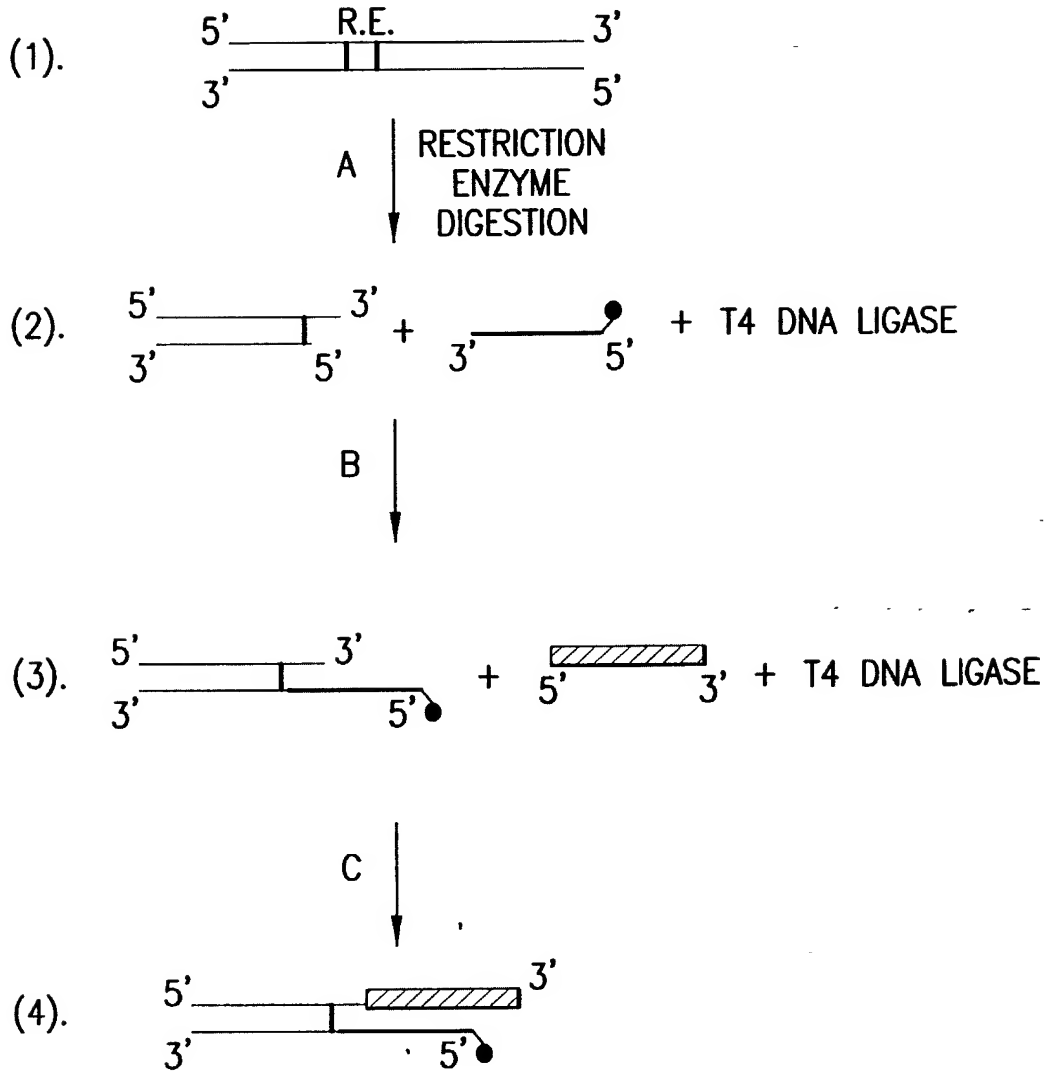


FIG. 14

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s). Chesnut *et al.*; Tel 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

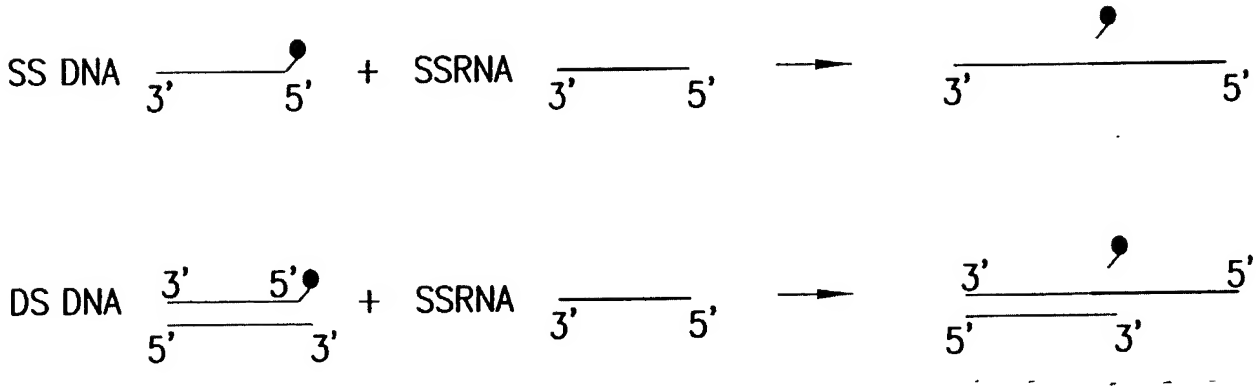


FIG. 15

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt No. 0942 5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

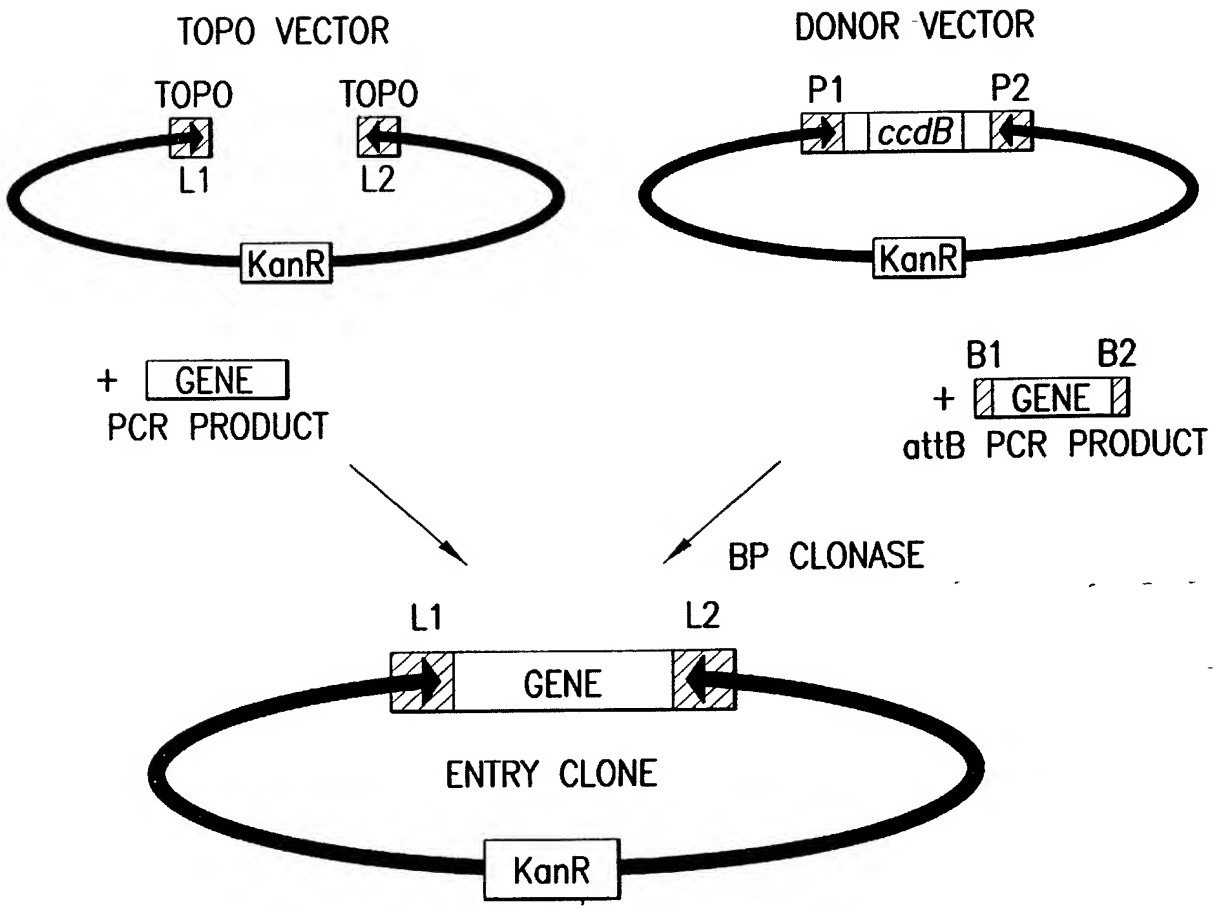


FIG. 16

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel· 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

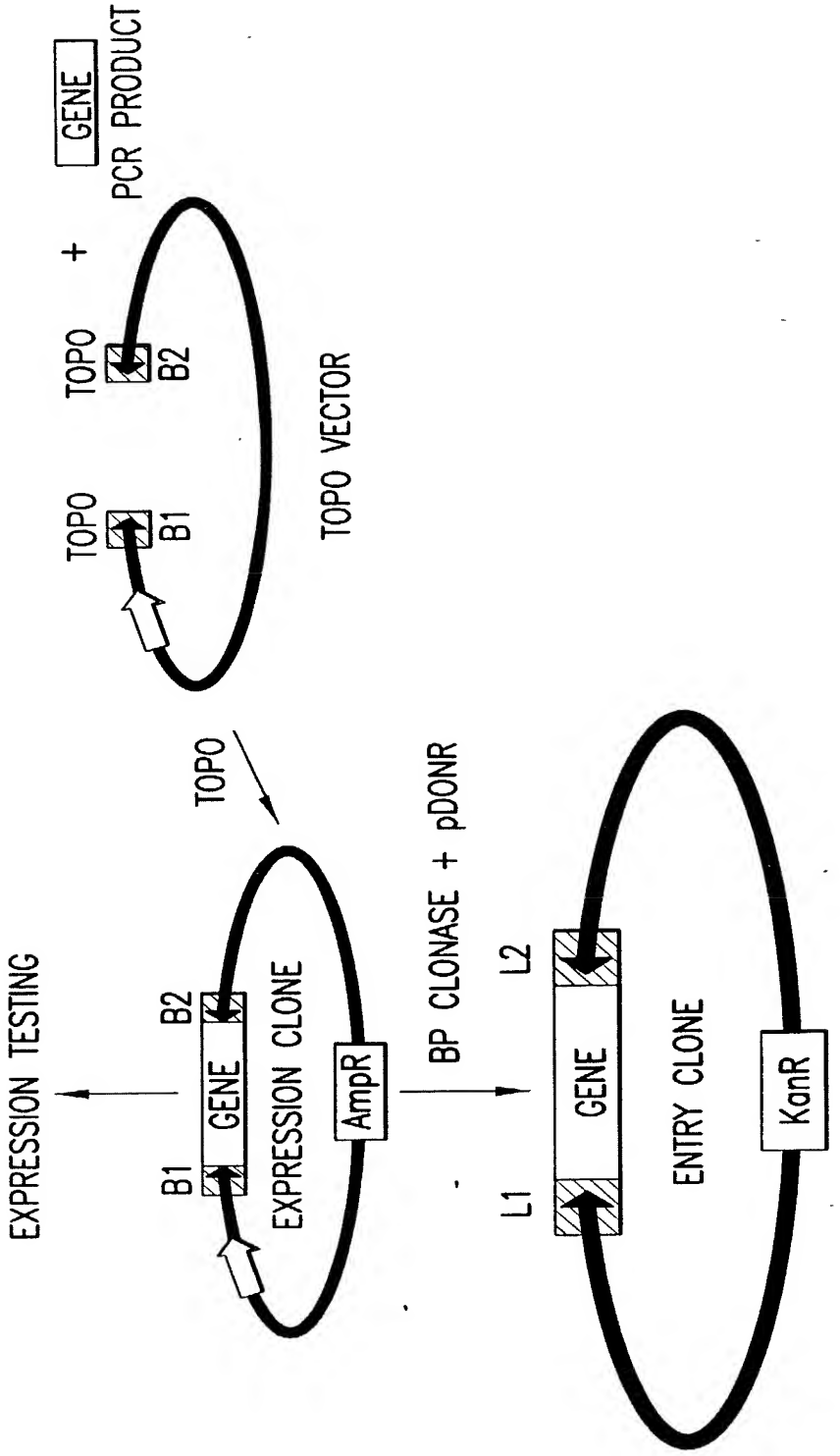


FIG. 17

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid. .

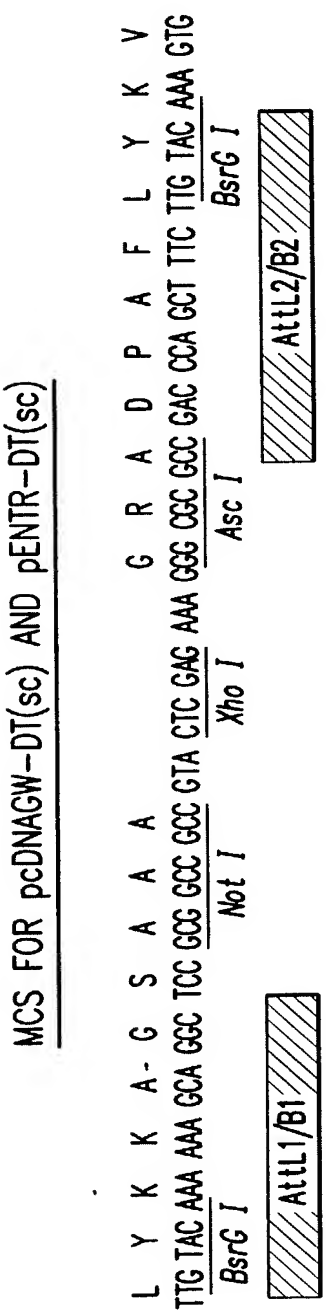


FIG. 18

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s). Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid. .

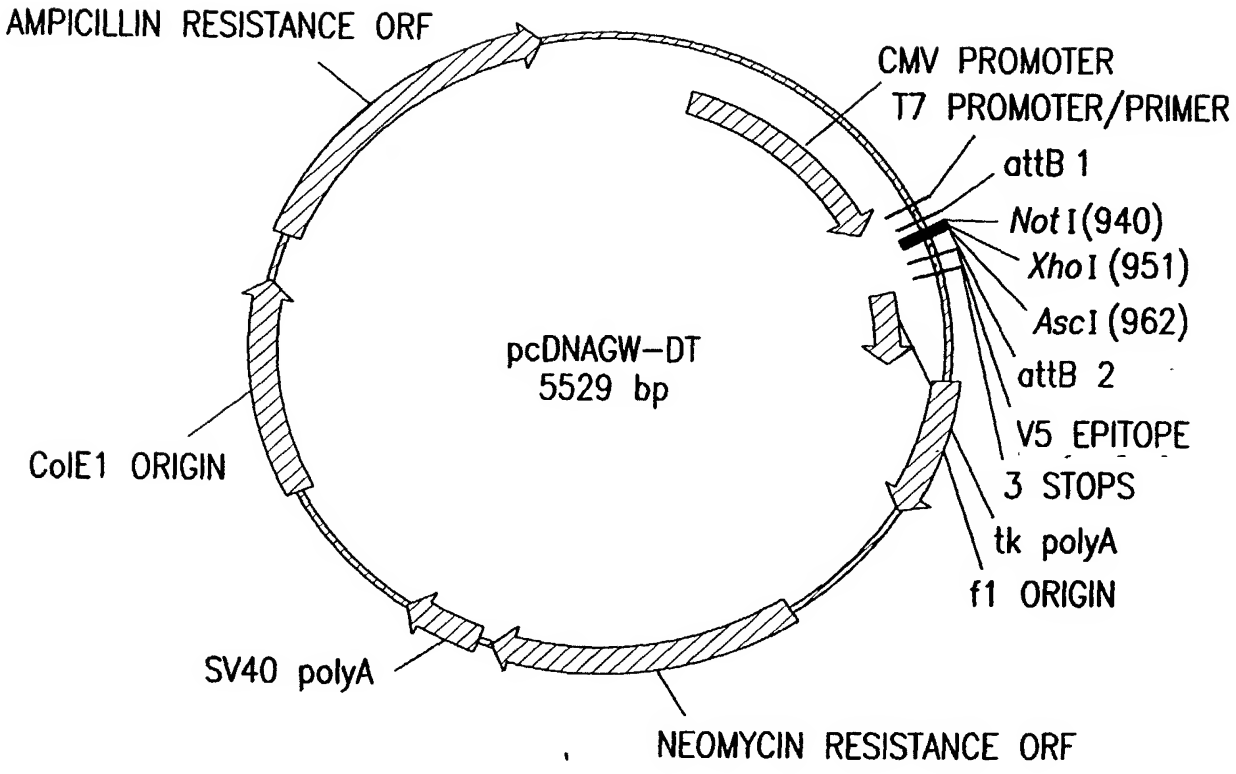


FIG. 19

Appl No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title. Method and Compositions for Synthesis of Nucleic Acid ..

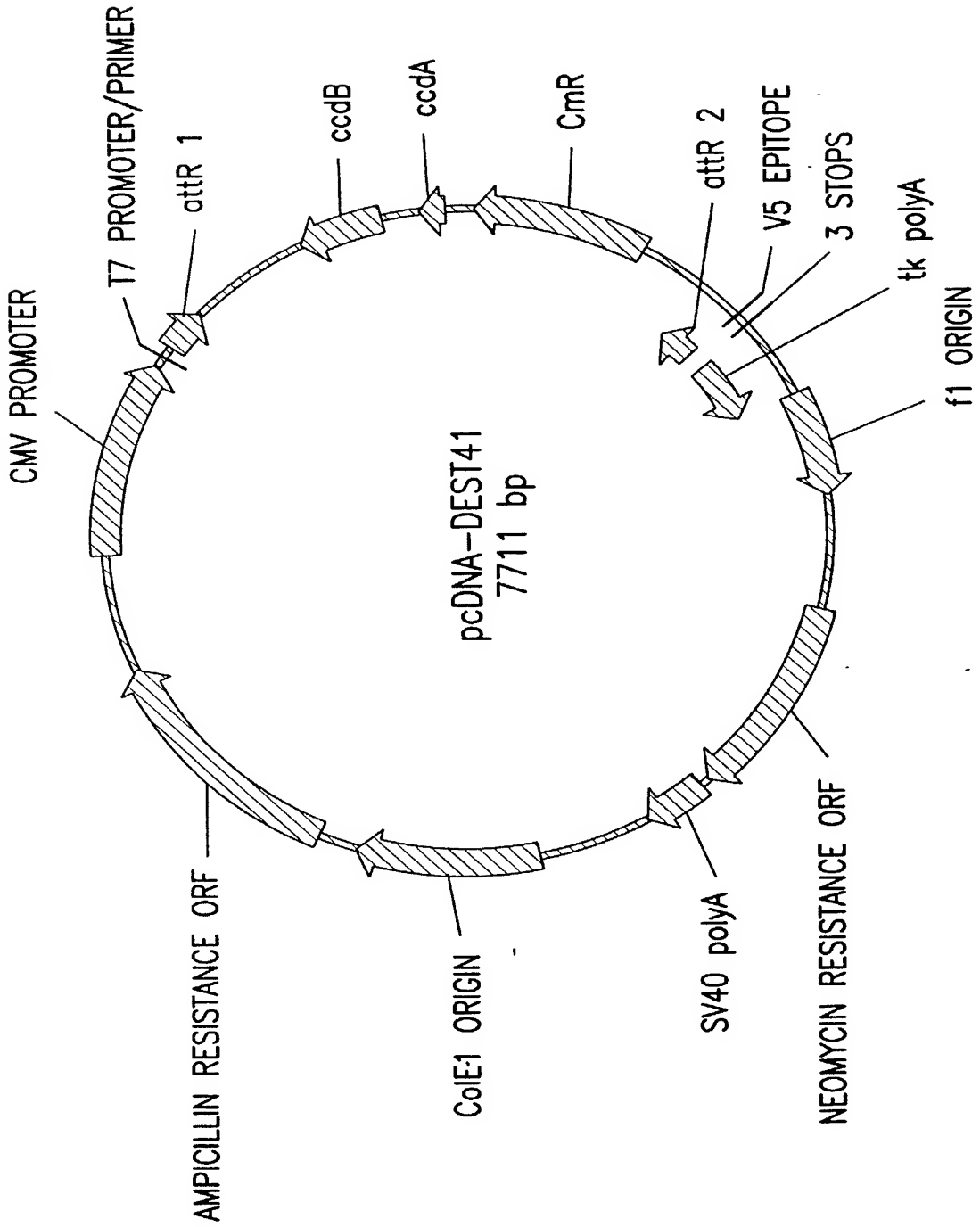


FIG. 20

Appl No. 10/005,876, Filed. December 7, 2001
Dkt No. 0942.5340002/RWE/BJD, Group Art Unit: 1645
Inventor(s). Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

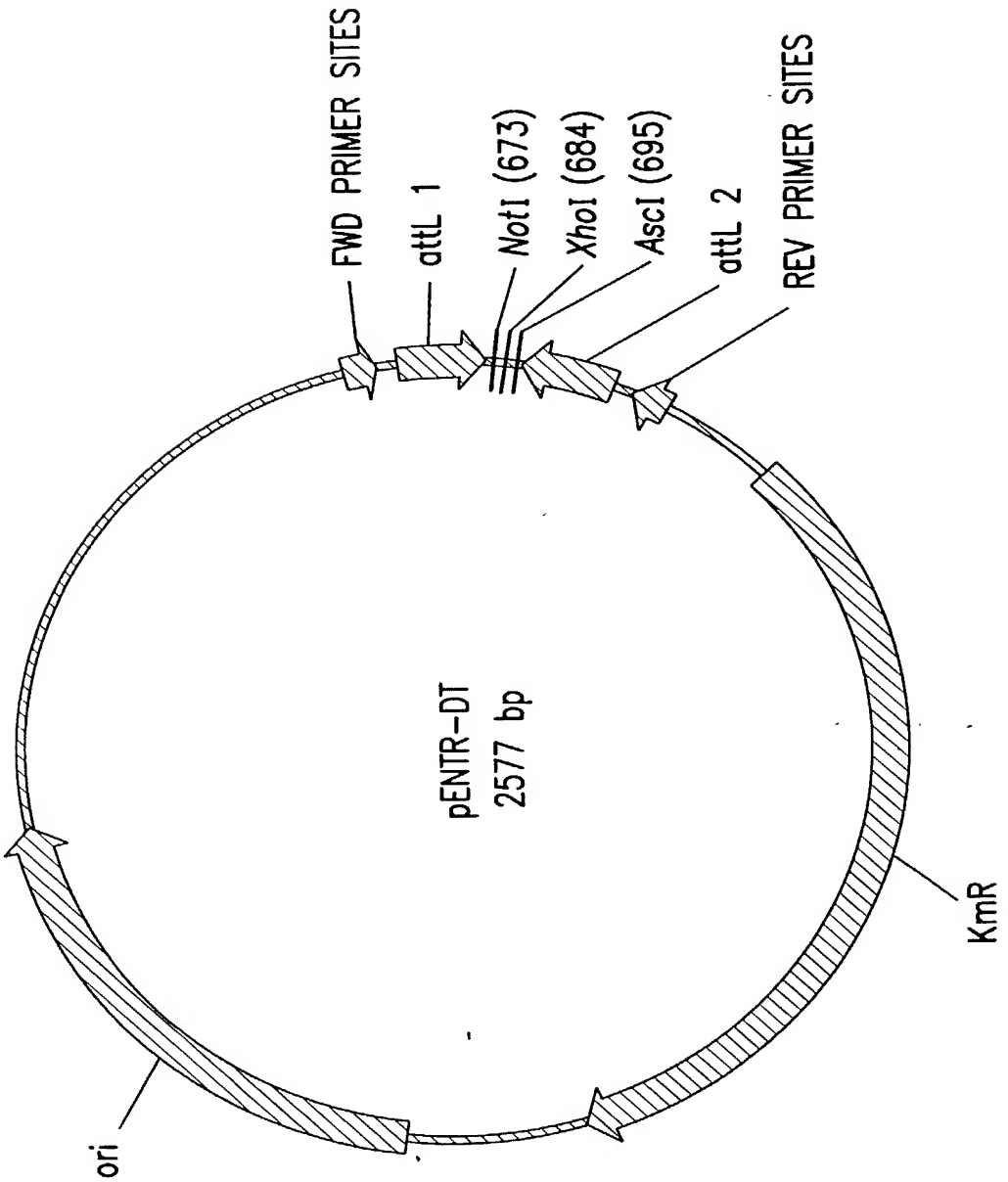


FIG. 21

Appl. No. 10/005,876; Filed December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title. Method and Compositions for Synthesis of Nucleic Acid...

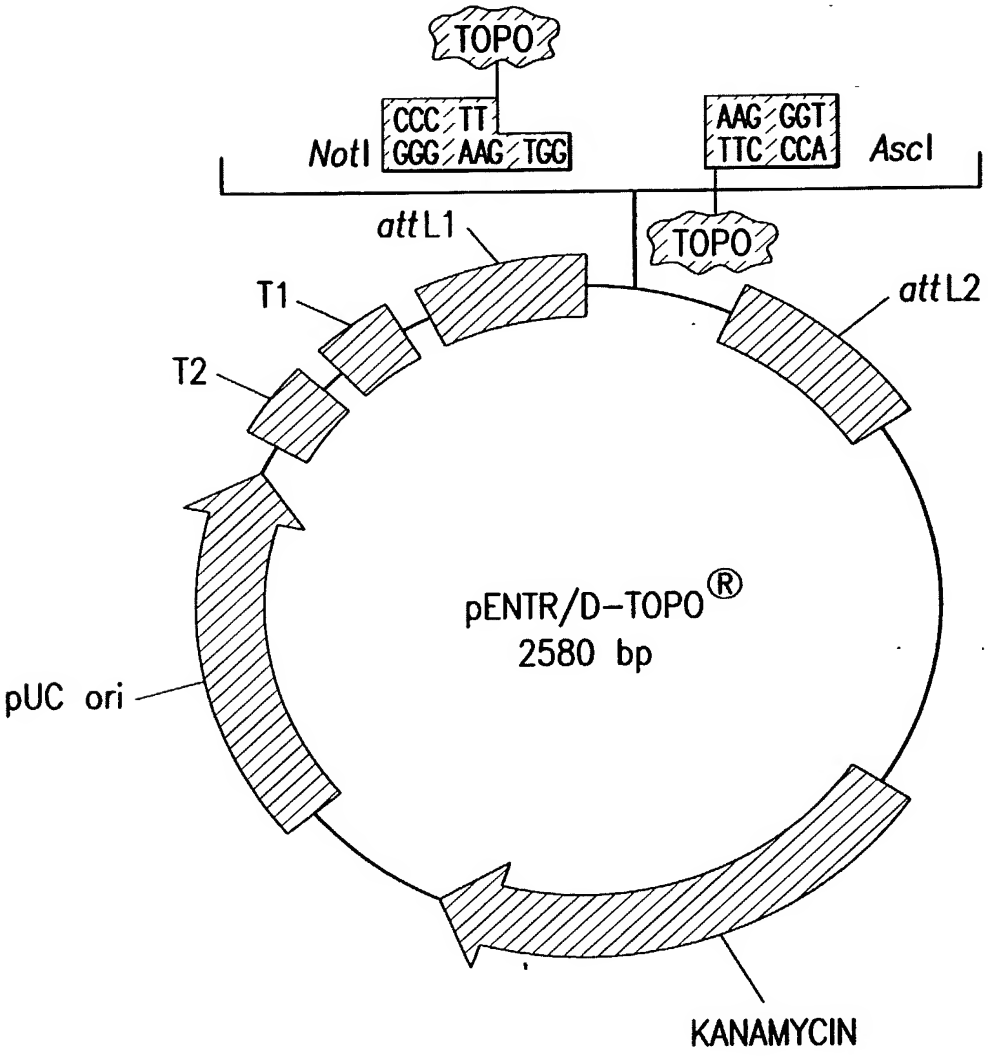


FIG. 22A

```
   1 ctttcctgcg ttatcccctg attctgtgga taaccgtatt accgcctttg agtgagctga
  61 taccgctcgc cgcagccgaa cgaccgagcg cagcgagtca gtgagcgagg aagcggaaga
 121 gcgcccaata cgcaaaccgc ctctccccgc gcgttggccg attcattaat gcagctggca
 181 cgacaggttt cccgactgga aagcgggcag tgagcgcaac gcaattaata cgcgtaccgc
 241 tagccaggaa gagtttgtag aaacgcaaaa aggccatccg tcaggatggc cttctgctta
 301 gtttgatgcc tggcagttta tggcgggcgt cctgcccgcc accctccggg ccgttgcttc
 361 acaacgttca aatccgctcc cggcggattt gtcctactca ggagagcgtt caccgacaaa
 421 caacagataa aacgaaaggc ccagtcttcc gactgagcct ttcgttttat ttgatgcctg
 481 gcagttccct actctcgcgt taacgctagc atggatgttt tcccagtcac gacgttgtaa
 541 aacgacggcc agtcttaagc tcgggcccca aataatgatt ttattttgac tgatagtgac
 601 ctgttcgttg caacaaattg atgagcaatg ctttttttata atgccaactt tgtacaaaaa
 661 agcaggctcc gcggccgccc cttcaccatg nnnnnnnnna agggtgggcg cgccgaccca
 721 gctttcttgt acaaagttgg cattataaga aagcattgct tatcaatttg ttgcaacgaa
 781 caggtcacta tcagtcaaaa taaaatcatt atttgccatc cagctgatat cccctatagt
 841 gagtcgtatt acatggtcat agctgtttcc tggcagctct ggcccgtgtc tcaaaatctc
 901 tgatgttaca ttgcacaaga taaaaatata tcatcatgaa caataaaact gtctgcttac
 961 ataaacagta atacaagggg tgttatgagc catattcaac gggaaacgtc gaggccgcga
1021 ttaaattcca acatggatgc tgatttatat gggtataaat gggctcgcga taatgtcggg
1081 caatcaggtg cgacaatcta tcgcttgtat gggaagcccg atgcgccaga gttgtttctg
1141 aaacatggca aaggtagcgt tgccaatgat gttacagatg agatggtcag actaaactgg
1201 ctgacggaat ttatgcctct tccgaccatc aagcatttta tccgtactcc tgatgatgca
1261 tggttactca ccactgcgat ccccggaaaa acagcattcc aggtattaga agaatatcct
1321 gattcaggtg aaaatattgt tgatgcgctg gcagtgttcc tgcgccggtt gcattcgatt
1381 cctgtttgta attgtccttt taacagcgat cgcgtatttc gtctcgctca ggcgcaatca
1441 cgaatgaata acggtttggt tgatgcgagt gattttgatg acgagcgtaa tggctggcct
1501 gttgaacaag tctggaaaga aatgcataaa cttttgccat tctcaccgga ttcagtcgtc
1561 actcatggtg atttctcact tgataacctt atttttgacg aggggaaatt aataggttgt
1621 attgatgttg gacgagtcgg aatcgcagac cgataccagg atcttgccat cctatggaac
1681 tgcctcggtg agttttctcc ttcattacag aaacggcttt ttcaaaaata tggtattgat
1741 aatcctgata tgaataaatt gcagtttcat ttgatgctcg atgagttttt ctaatcagaa
1801 ttggttaatt ggttgtaaca ctggcagagc attacgctga cttgacggga cggcgcaagc
1861 tcatgaccaa aatcccttaa cgtgagttac gcgtcgttcc actgagcgtc agaccccgta
1921 gaaaagatca aaggatcttc ttgagatcct ttttttctgc gcgtaatctg ctgcttgcaa
1981 acaaaaaaac caccgctacc agcggtggtt tgtttgccgg atcaagagct accaactctt
2041 tttccgaagg taactggctt cagcagagcg cagataccaa atactgtcct tctagtgtag
2101 ccgtagttag gccaccactt caagaactct gtagcaccgc ctacatacct cgctctgcta
2161 atcctgttac cagtggctgc tgccagtggc gataagtcgt gtcttaccgg gttggactca
2221 agacgatagt taccggataa ggcgcagcgg tcgggctgaa cgggggttc gtgcacacag
2281 cccagcttgg agcgaacgac ctacaccgaa ctgagatacc tacagcgtga gcattgagaa
2341 agcgccacgc ttcccgaagg gagaaaggcg gacaggtatc cggtaagcgg cagggtcgga
2401 acaggagagc gcacgaggga gcttccaggg ggaaacgcct ggtatcttta tagtcctgtc
2461 gggtttcgcc acctctgact tgagcgtcga tttttgtgat gctcgtcagg ggggcggagc
2521 ctatggaaaa acgccagcaa cgcggccttt ttacggttcc tggccttttg ctggccttt
2581 gctcacatgt t
```

FIG.22B

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid .

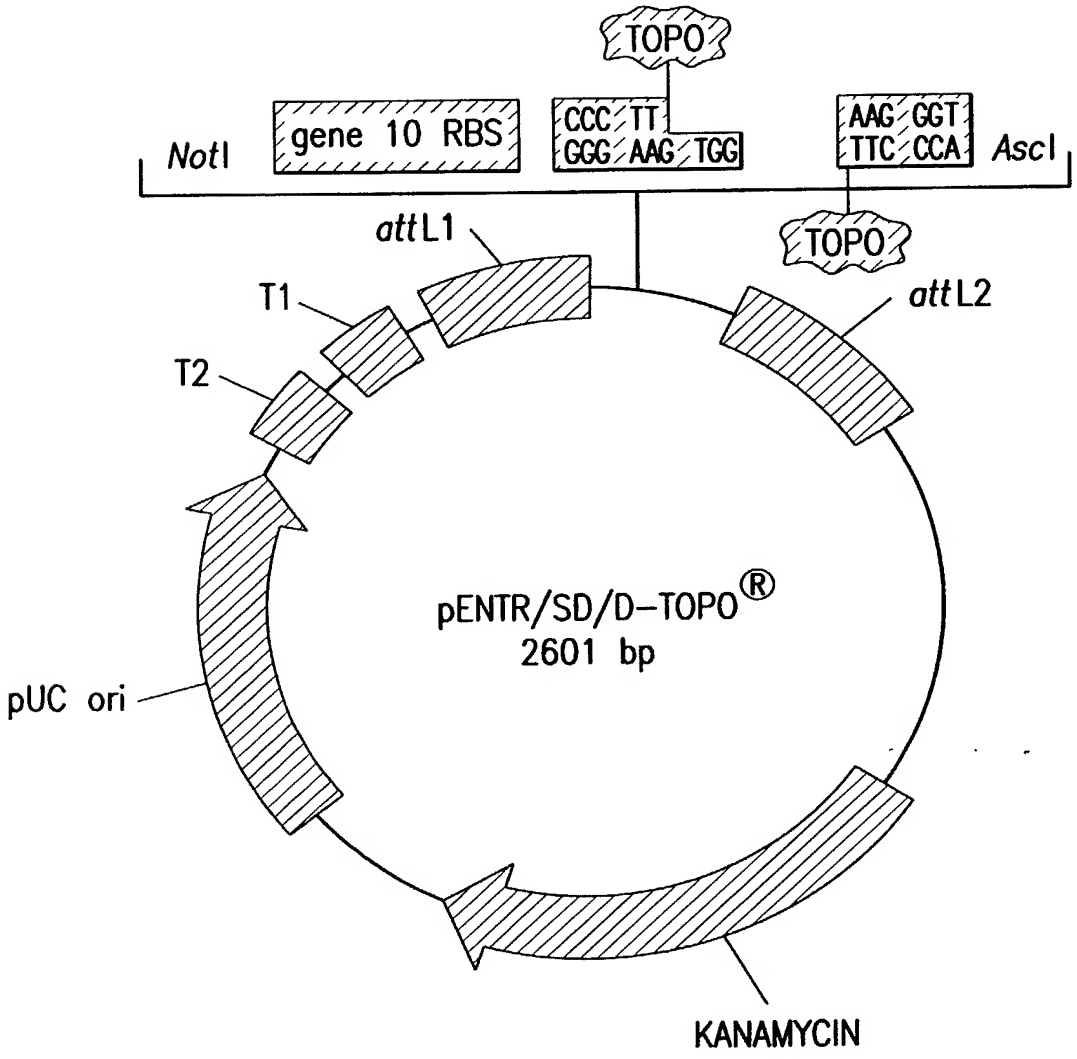


FIG. 23A

```
   1 ctttcctgcg ttatcccctg attctgtgga taaccgtatt accgcctttg agtgagctga
  61 taccgctcgc cgcagccgaa cgaccgagcg cagcgagtca gtgagcgagg aagcggaaga
 121 gcgcccaata cgcaaaccgc ctctccccgc gcgttggccg attcattaat gcagctggca
 181 cgacaggttt cccgactgga aagcgggcag tgagcgcaac gcaattaata cgcgtaccgc
 241 tagccaggaa gagtttgtag aaacgcaaaa aggccatccg tcaggatggc cttctgctta
 301 gtttgatgcc tggcagttta tggcgggcgt cctgcccgcc accctccggg ccgttgcttc
 361 acaacgttca aatccgctcc cggcggattt gtcctactca ggagagcgtt caccgacaaa
 421 caacagataa aacgaaaggc ccagtcttcc gactgagcct ttcgttttat ttgatgcctg
 481 gcagttccct actctcgcgt taacgctagc atggatgttt tcccagtcac gacgttgtaa
 541 aacgacggcc agtcttaagc tcgggcccca aataatgatt ttattttgac tgatagtgac
 601 ctgttcgttg caacaaattg atgagcaatg ctttttttata atgccaactt tgtacaaaaa
 661 agcaggctcc gcggccgcct tgtttaactt taagaaggag cccttcaccn nnnnnaaggg
 721 tgggcgcgcc gacccagctt tcttgtacaa agttggcatt ataagaaagc attgcttatc
 781 aatttgttgc aacgaacagg tcactatcag tcaaaataaa atcattattt gccatccagc
 841 tgatatcccc tatagtgagt cgtattacat ggtcatagct gtttcctggc agctctggcc
 901 cgtgtctcaa aatctctgat gttacattgc acaagataaa aatatatcat catgaacaat
 961 aaaactgtct gcttacataa acagtaatac aaggggtgtt atgagccata ttcaacggga
1021 aacgtcgagg ccgcgattaa attccaacat ggatgctgat ttatatgggt ataaatgggc
1081 tcgcgataat gtcgggcaat caggtgcgac aatctatcgc ttgtatggga agcccgatgc
1141 gccagagttg tttctgaaac atggcaaagg tagcgttgcc aatgatgtta cagatgagat
1201 ggtcagacta aactggctga cggaatttat gcctcttccg accatcaagc attttatccg
1261 tactcctgat gatgcatggt tactcaccac tgcgatcccc ggaaaaacag cattccaggt
1321 attagaagaa tatcctgatt caggtgaaaa tattgttgat gcgctggcag tgttcctgcg
1381 ccggttgcat tcgattcctg tttgtaattg tccttttaac agcgatcgcg tatttcgtct
1441 cgctcaggcg caatcacgaa tgaataacgg tttggttgat gcgagtgatt ttgatgacga
1501 gcgtaatggc tggcctgttg aacaagtctg gaaagaaatg cataaacttt tgccattctc
1561 accggattca gtcgtcactc atggtgattt ctcacttgat aaccttattt ttgacgaggg
1621 gaaattaata ggttgtattg atgttggacg agtcggaatc gcagaccgat accaggatct
1681 tgccatccta tggaactgcc tcggtgagtt ttctccttca ttacagaaac ggctttttca
1741 aaaatatggt attgataatc ctgatatgaa taaattgcag tttcatttga tgctcgatga
1801 gtttttctaa tcagaattgg ttaattggtt gtaacactgg cagagcatta cgctgacttg
1861 acgggacggc gcaagctcat gaccaaaatc ccttaacgtg agttacgcgt cgttccactg
1921 agcgtcagac cccgtagaaa agatcaaagg atcttcttga gatccttttt ttctgcgcgt
1981 aatctgctgc ttgcaaacaa aaaaaccacc gctaccagcg gtggtttgtt tgccggatca
2041 agagctacca actcttttte cgaaggtaac tggcttcagc agagcgcaga taccaaatac
2101 tgtccttcta gtgtagccgt agttaggcca ccacttcaag aactctgtag caccgcctac
2161 atacctcgct ctgctaatcc tgttaccagt ggctgctgcc agtggcgata agtcgtgtct
2221 taccgggttg gactcaagac gatagttacc ggataaggcg cagcggtcgg gctgaacggg
2281 gggttcgtgc acacagccca gcttggagcg aacgacctac accgaactga gatacctaca
2341 gcgtgagcat tgagaaagcg ccacgcttcc cgaagggaga aaggcggaca ggtatccggt
2401 aagcggcagg gtcggaacag gagagcgcac gagggagctt ccagggggaa acgcctggta
2461 tctttatagt cctgtcgggt ttcgccacct ctgacttgag cgtcgatttt tgtgatgctc
2521 gtcaggggggg cggagcctat ggaaaaacgc cagcaacgcg gccttttttac ggttcctggc
2581 cttttgctgg ccttttgctc acatgtt
```

FIG.23B

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid .

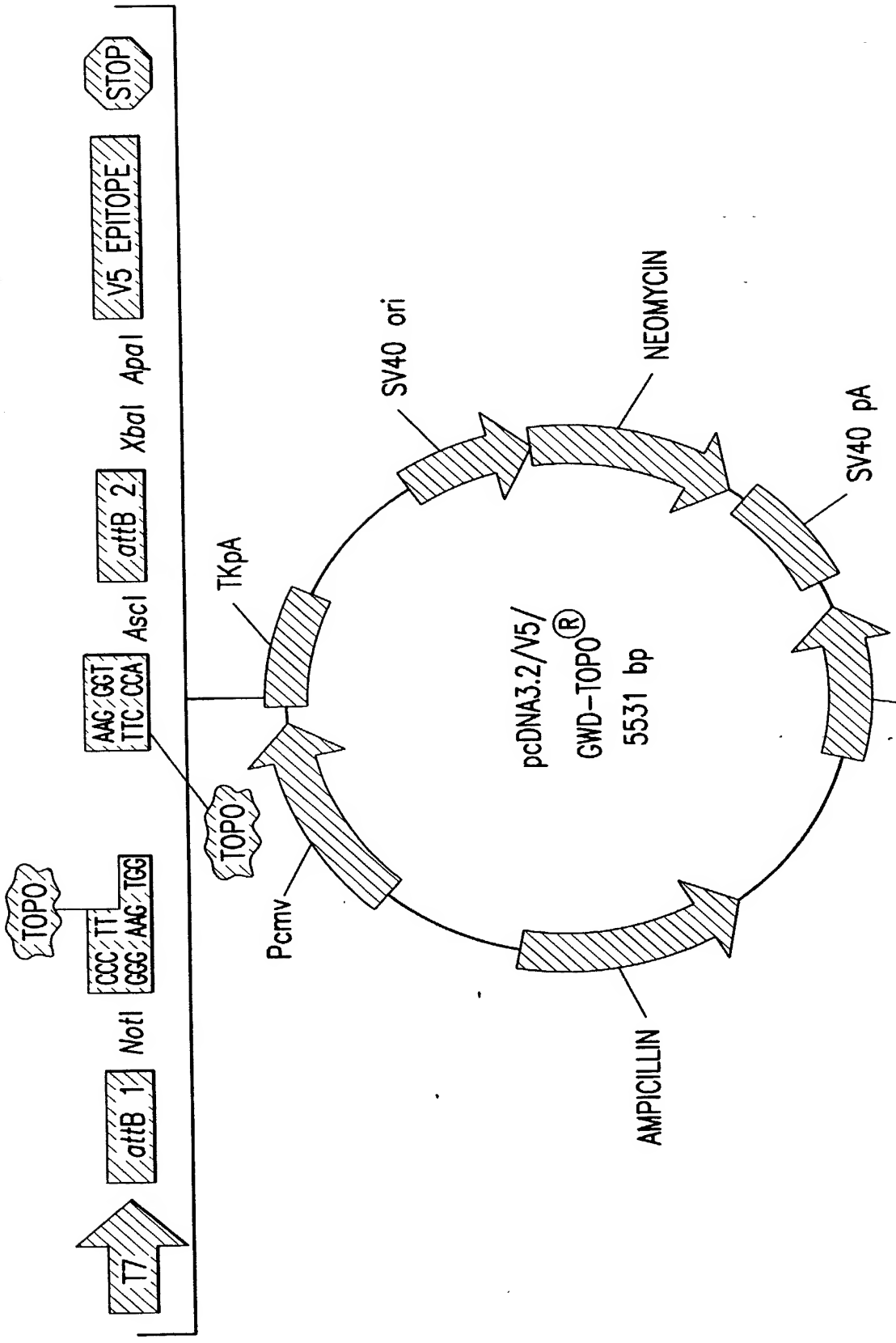


FIG. 24A

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s). Chesnut *et al* ; Tel: 202/371-2600
Title. Method and Compositions for Synthesis of Nucleic Acid...


```
   1 gacggatcgg gagatctccc gatcccctat ggtcgactct cagtacaatc tgctctgatg
  61 ccgcatagtt aagccagtat ctgctccctg cttgtgtgtt ggaggtcgct gagtagtgcg
 121 cgagcaaaat ttaagctaca acaaggcaag gcttgaccga caattgcatg aagaatctgc
 181 ttagggttag gcgttttgcg ctgcttcgcg atgtacgggc cagatatacg cgttgacatt
 241 gattattgac tagttattaa tagtaatcaa ttacggggtc attagttcat agcccatata
 301 tggagttccg cgttacataa cttacggtaa atggcccgcc tggctgaccg cccaacgacc
 361 cccgcccatt gacgtcaata atgacgtatg ttcccatagt aacgccaata gggactttcc
 421 attgacgtca atgggtggac tatttacggt aaactgccca cttggcagta catcaagtgt
 481 atcatatgcc aagtacgccc cctattgacg tcaatgacgg taaatggccc gcctggcatt
 541 atgcccagta catgacctta tgggactttc ctacttggca gtacatctac gtattagtca
 601 tcgctattac catggtgatg cggttttggc agtacatcaa tgggcgtgga tagcggtttg
 661 actcacgggg atttccaagt ctccacccca ttgacgtcaa tgggagtttg ttttggcacc
 721 aaaatcaacg ggactttcca aaatgtcgta acaactccgc cccattgacg caaatgggcg
 781 gtaggcgtgt acggtgggag gtctatataa gcagagctct ctggctaact agagaaccca
 841 ctgcttactg gcttatcgaa attaatacga ctcactatag ggagacccaa gctggctagt
 901 taagctatca acaagtttgt acaaaaaagc aggctccgcg gccgcccctt caccatgnnn
 961 nnnnnnaagg gtgggcgcgc cgacccagct ttcttgtaca aagtggttga tctagagggc
1021 ccgcggttcg aaggtaagcc tatccctaac cctctcctcg gtctcgattc tacgcgtacc
1081 ggttagtaat gagtttaaac gggggaggct aactgaaaca cggaaggaga caataccgga
1141 aggaacccgc gctatgacgg caataaaaag acagaataaa acgcacgggt gttgggtcgt
1201 ttgttcataa acgcggggtt cggtcccagg gctggcactc tgtcgatacc ccaccgagac
1261 cccattgggg ccaatacgcc cgcgtttctt ccttttcccc accccacccc ccaagttcgg
1321 gtgaaggccc agggctcgca gccaacgtcg gggcggcagg ccctgccata gcagatctgc
1381 gcagctgggg ctctaggggg tatccccacg cgccctgtag cggcgcatta agcgcggcgg
1441 gtgtggtggt tacgcgcagc gtgaccgcta cacttgccag cgccctagcg cccgctcctt
1501 tcgctttctt cccttccttt ctcgccacgt tcgccggctt tccccgtcaa gctctaaatc
1561 ggggcatccc tttagggttc cgatttagtg ctttacggca cctcgacccc aaaaaacttg
1621 attagggtga tggttcacgt agtgggccat cgccctgata gacggttttt cgccctttga
1681 cgttggagtc cacgttcttt aatagtggac tcttgttcca aactggaaca acactcaacc
1741 ctatctcggt ctattctttt gatttataag ggattttggg gatttcggcc tattggttaa
1801 aaaatgagct gatttaacaa aaatttaacg cgaattaatt ctgtggaatg tgtgtcagtt
1861 agggtgtgga aagtccccag gctccccagc aggcagaagt atgcaaagca tgcatctcaa
1921 ttagtcagca accaggtgtg gaaagtcccc aggctcccca gcaggcagaa gtatgcaaag
1981 catgcatctc aattagtcag caaccatagt cccgccccta actccgccca tcccgccccc
2041 aactccgccc agttccgccc attctccgcc ccatggctga ctaatttttt ttatttatgc
2101 agaggccgag gccgcctctg cctctgagct attccagaag tagtgaggag gctttttttgg
2161 aggcctaggc ttttgcaaaa agctcccggg agcttgtata tccattttcg gatctgatca
2221 agagacagga tgaggatcgt ttcgcatgat tgaacaagat ggattgcacg caggttctcc
2281 ggccgcttgg gtggagaggc tattcggcta tgactgggca caacagacaa tcggctgctc
2341 tgatgccgcc gtgttccggc tgtcagcgca ggggcgcccg gttcttttttg tcaagaccga
2401 cctgtccggt gccctgaatg aactgcagga cgaggcagcg cggctatcgt ggctggccac
2461 gacgggcgtt ccttgcgcag ctgtgctcga cgttgtcact gaagcgggaa gggactggct
2521 gctattgggc gaagtgccgg ggcaggatct cctgtcatct caccttgctc ctgccgagaa
2581 agtatccatc atggctgatg caatgcggcg gctgcatacg cttgatccgg ctacctgccc
2641 attcgaccac caagcgaaac atcgcatcga gcgagcacgt actcggatgg aagccggtct
2701 tgtcgatcag gatgatctgg acgaagagca tcaggggctc gcgccagccg aactgttcgc
2761 caggctcaag gcgcgcatgc ccgacggcga ggatctcgtc gtgacccatg gcgatgcctg-
```

FIG.24B

```
2821 cttgccgaat atcatggtgg aaaatggccg cttttctgga ttcatcgact gtggccggct
2881 gggtgtggcg gaccgctatc aggacatagc gttggctacc cgtgatattg ctgaagagct
2941 tggcggcgaa tgggctgacc gcttcctcgt gctttacggt atcgccgctc ccgattcgca
3001 gcgcatcgcc ttctatcgcc ttcttgacga gttcttctga gcgggactct ggggttcgcg
3061 aaatgaccga ccaagcgacg cccaacctgc catcacgaga tttcgattcc accgccgcct
3121 tctatgaaag gttgggcttc ggaatcgttt tccgggacgc cggctggatg atcctccagc
3181 gcggggatct catgctggag ttcttcgccc accccaactt gtttattgca gcttataatg
3241 gttacaaata aagcaatagc atcacaaatt tcacaaataa agcatttttt tcactgcatt
3301 ctagttgtgg tttgtccaaa ctcatcaatg tatcttatca tgtctgtata ccgtcgacct
3361 ctagctagag cttggcgtaa tcatggtcat agctgtttcc tgtgtgaaat tgttatccgc
3421 tcacaattcc acacaacata cgagccggaa gcataaagtg taaagcctgg ggtgcctaat
3481 gagtgagcta actcacatta attgcgttgc gctcactgcc cgctttccag tcgggaaacc
3541 tgtcgtgcca gctgcattaa tgaatcggcc aacgcgcggg gagaggcggt ttgcgtattg
3601 ggcgctcttc cgcttcctcg ctcactgact cgctgcgctc ggtcgttcgg ctgcggcgag
3661 cggtatcagc tcactcaaag gcggtaatac ggttatccac agaatcaggg gataacgcag
3721 gaaagaacat gtgagcaaaa ggccagcaaa aggccaggaa ccgtaaaaag gccgcgttgc
3781 tggcgttttt ccataggctc cgccccctg acgagcatca caaaaatcga cgctcaagtc
3841 agaggtggcg aaacccgaca ggactataaa gataccaggc gtttcccct ggaagctccc
3901 tcgtgcgctc tcctgttccg accctgccgc ttaccggata cctgtccgcc tttctccctt
3961 cgggaagcgt ggcgctttct caatgctcac gctgtaggta tctcagttcg gtgtaggtcg
4021 ttcgctccaa gctgggctgt gtgcacgaac ccccgttca gcccgaccgc tgcgccttat
4081 ccggtaacta tcgtcttgag tccaacccgg taagacacga cttatcgcca ctggcagcag
4141 ccactggtaa caggattagc agagcgaggt atgtaggcgg tgctacagag ttcttgaagt
4201 ggtggcctaa ctacggctac actagaagga cagtatttgg tatctgcgct ctgctgaagc
4261 cagttacctt cggaaaaaga gttggtagct cttgatccgg caaacaaacc accgctggta
4321 gcggtggttt ttttgtttgc aagcagcaga ttacgcgcag aaaaaaagga tctcaagaag
4381 atcctttgat cttttctacg gggtctgacg ctcagtggaa cgaaaactca cgttaaggga
4441 ttttggtcat gagattatca aaaaggatct tcacctagat ccttttaaat taaaaatgaa
4501 gttttaaatc aatctaaagt atatatgagt aaacttggtc tgacagttac caatgcttaa
4561 tcagtgaggc acctatctca gcgatctgtc tatttcgttc atccatagtt gcctgactcc
4621 ccgtcgtgta gataactacg atacgggagg gcttaccatc tggccccagt gctgcaatga
4681 taccgcgaga cccacgctca ccggctccag atttatcagc aataaaccag ccagccggaa
4741 gggccgagcg cagaagtggt cctgcaactt tatccgcctc catccagtct attaattgtt
4801 gccgggaagc tagagtaagt agttcgccag ttaatagttt gcgcaacgtt gttgccattg
4861 ctacaggcat cgtggtgtca cgctcgtcgt ttggtatggc ttcattcagc tccggttccc
4921 aacgatcaag gcgagttaca tgatccccca tgttgtgcaa aaaagcggtt agctccttcg
4981 gtcctccgat cgttgtcaga agtaagttgg ccgcagtgtt atcactcatg gttatggcag
5041 cactgcataa ttctcttact gtcatgccat ccgtaagatg cttttctgtg actggtgagt
5101 actcaaccaa gtcattctga gaatagtgta tgcggcgacc gagttgctct tgcccggcgt
5161 caatacggga taataccgcg ccacatagca gaactttaaa agtgctcatc attggaaaac
5221 gttcttcggg gcgaaaactc tcaaggatct taccgctgtt gagatccagt tcgatgtaac
5281 ccactcgtgc acccaactga tcttcagcat cttttacttt caccagcgtt tctgggtgag
5341 caaaaacagg aaggcaaaat gccgcaaaaa agggaataag ggcgacacgg aaatgttgaa
5401 tactcatact cttccttttt caatattatt gaagcattta tcagggttat tgtctcatga
5461 gcggatacat atttgaatgt atttagaaaa ataaacaaat aggggttccg cgcacatttc
5521 cccgaaaagt gccacctgac gtc
```

FIG.24C

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s). Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

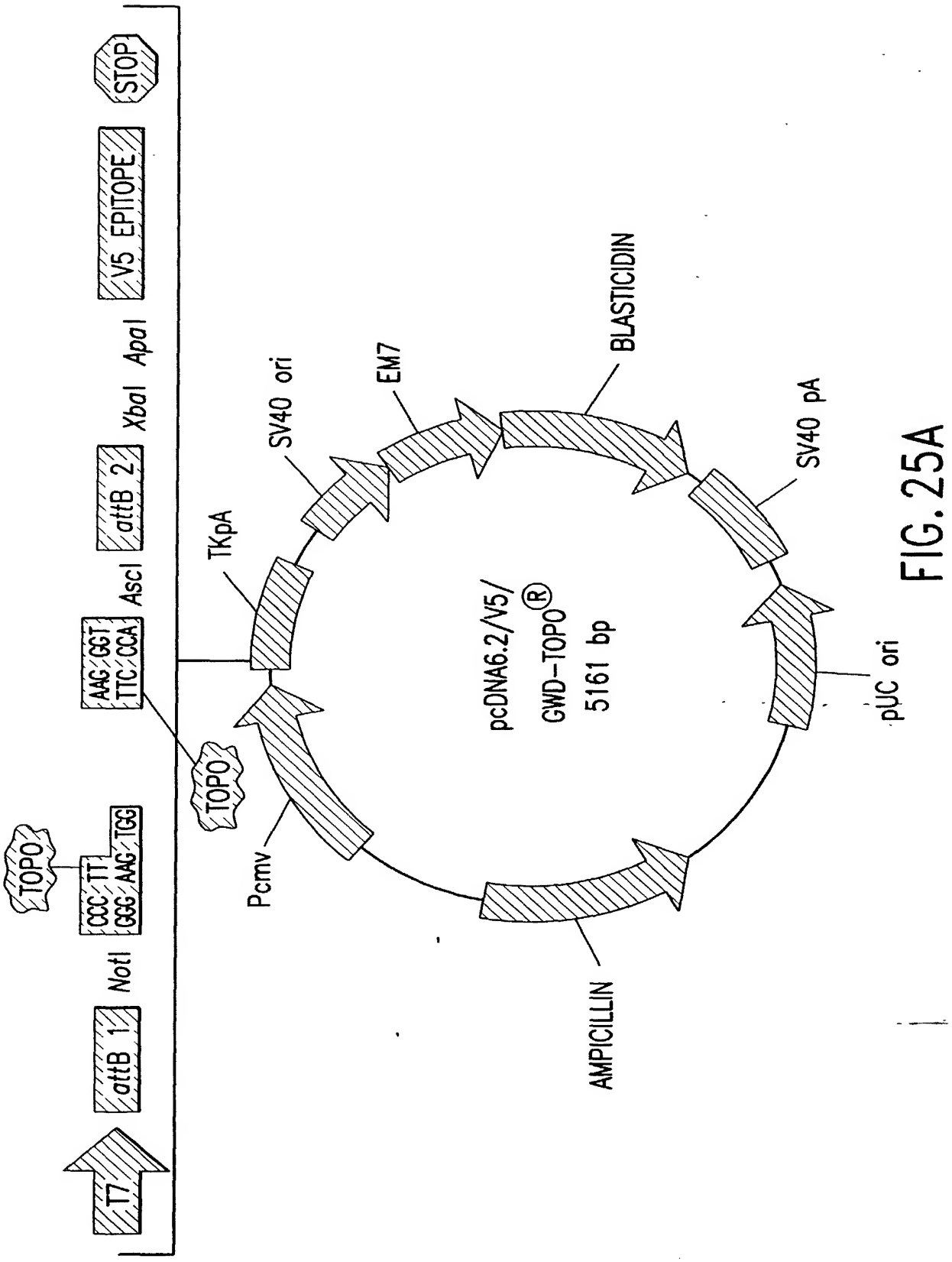


FIG. 25A

```
   1 gacggatcgg gagatctccc gatcccctat ggtgcactct cagtacaatc tgctctgatg
  61 ccgcatagtt aagccagtat ctgctccctg cttgtgtgtt ggaggtcgct gagtagtgcg
 121 cgagcaaaat ttaagctaca acaaggcaag gcttgaccga caattgcatg aagaatctgc
 181 ttagggttag gcgttttgcg ctgcttcgcg atgtacgggc cagatatacg cgttgacatt
 241 gattattgac tagttattaa tagtaatcaa ttacggggtc attagttcat agcccatata
 301 tggagttccg cgttacataa cttacggtaa atggcccgcc tggctgaccg cccaacgacc
 361 cccgcccatt gacgtcaata atgacgtatg ttcccatagt aacgccaata gggactttcc
 421 attgacgtca atgggtggag tatttacggt aaactgccca cttggcagta catcaagtgt
 481 atcatatgcc aagtacgccc cctattgacg tcaatgacgg taaatggccc gcctggcatt
 541 atgcccagta catgacctta tgggactttc ctacttggca gtacatctac gtattagtca
 601 tcgctattac catggtgatg cggttttggc agtacatcaa tgggcgtgga tagcggtttg
 661 actcacgggg atttccaagt ctccacccca ttgacgtcaa tgggagtttg ttttggcacc
 721 aaaatcaacg ggactttcca aaatgtcgta acaactccgc cccattgacg caaatgggcg
 781 gtaggcgtgt acggtgggag gtctatataa gcagagctct ctggctaact agagaaccca
 841 ctgcttactg gcttatcgaa attaatacga ctcactatag ggagacccaa gctggctagt
 901 taagctatca acaagtttgt acaaaaaagc aggctccgcg gccgcccctt caccatgnnn
 961 nnnnnnaagg gtgggcgcgc cgacccagct ttcttgtaca aagtggttga tctagagggc
1021 ccgcggttcg aaggtaagcc tatccctaac cctctcctcg gtctcgattc tacgcgtacc
1081 ggttagtaat gagtttaaac gggggaggct aactgaaaca cggaaggaga caataccgga
1141 aggaacccgc gctatgacgg caataaaaag acagaataaa acgcacgggt gttgggtcgt
1201 ttgttcataa acgcggggtt cggtcccagg gctggcactc tgtcgatacc ccaccgagac
1261 cccattgggg ccaatacgcc cgcgtttctt ccttttcccc accccacccc ccaagttcgg
1321 gtgaaggccc agggctcgca gccaacgtcg gggcggcagg ccctgccata gcagatctgc
1381 gcagctgggg ctctaggggg tatccccacg cgccctgtag cggcgcatta agcgcggcgg
1441 gtgtggtggt tacgcgcagc gtgaccgcta cacttgccag cgccctagcg cccgctcctt
1501 tcgctttctt cccttccttt ctcgccacgt tcgccggctt tccccgtcaa gctctaaatc
1561 ggggcatccc tttagggttc cgatttagtg ctttacggca cctcgacccc aaaaaacttg
1621 attagggtga tggttcacgt agtgggccat cgccctgata gacggttttt cgccctttga
1681 cgttggagtc cacgttcttt aatagtggac tcttgttcca aactggaaca acactcaacc
1741 ctatctcggt ctattctttt gatttataag ggattttggg gatttcggcc tattggttaa
1801 aaaatgagct gatttaacaa aaatttaacg cgaattaatt ctgtggaatg tgtgtcagtt
1861 agggtgtgga aagtccccag gctccccagc aggcagaagt atgcaaagca tgcatctcaa
1921 ttagtcagca accaggtgtg gaaagtcccc aggctcccca gcaggcagaa gtatgcaaag
1981 catgcatctc aattagtcag caaccatagt cccgccccta actccgccca tcccgccccc
2041 aactccgccc agttccgccc attctccgcc ccatggctga ctaatttttt ttatttatgc
2101 agaggccgag gccgcctctg cctctgagct attccagaag tagtgaggag gctttttttgg
2161 aggcctaggc ttttgcaaaa agctcccggg agcttgtata tccattttcg gatctgatca
2221 gcacgtgttg acaattaatc atcggcatag tatatcggca tagtataata cgacaaggtg
2281 aggaactaaa ccatggccaa gcctttgtct caagaagaat ccaccctcat tgaaagagca
2341 acggctacaa tcaacagcat ccccatctct gaagactaca gcgtcgccag cgcagctctc
2401 tctagcgacg gccgcatctt cactggtgtc aatgtatatc attttactgg gggaccttgt
2461 gcagaactcg tggtgctggg cactgctgct gctgcggcag ctggcaacct gacttgtatc
2521 gtcgcgatcg gaaatgagaa caggggcatc ttgagccccc gcggacggtg ccgacaggtg
2581 cttctcgatc tgcatcctgg gatcaaagcc atagtgaagg acagtgatgg acagccgacg
2641 gcagttggga ttcgtgaatt gctgccctct ggttatgtgt gggagggcta agcacttcgt
2701 ggccgaggag caggactgac acgtgctacg agatttcgat tccaccgccg ccttctatga
2761 aaggttgggc ttcggaatcg ttttccggga cgccggctgg atgatcctcc agcgcgggga-
```

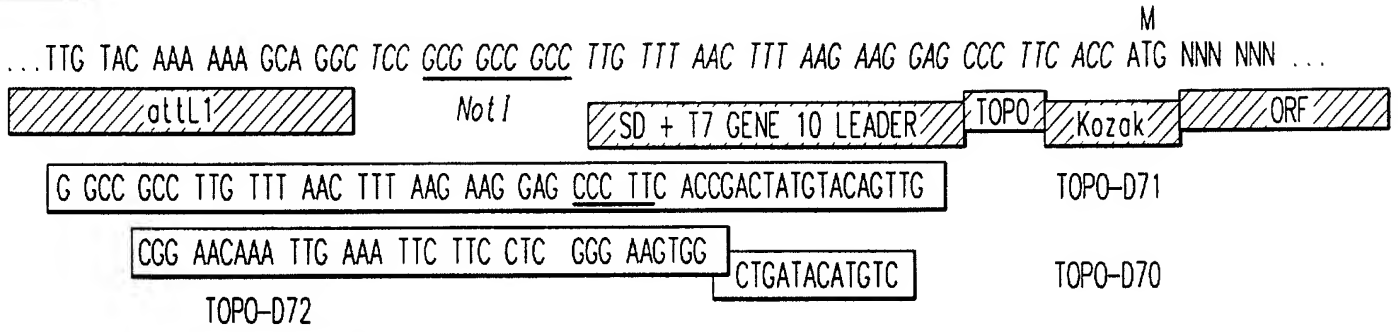
FIG.25B

2821 tctcatgctg gagttcttcg cccaccccaa cttgtttatt gcagcttata atggttacaa
2881 ataaagcaat agcatcacaa atttcacaaa taaagcattt ttttcactgc attctagttg
2941 tggtttgtcc aaactcatca atgtatctta tcatgtctgt ataccgtcga cctctagcta
3001 gagcttggcg taatcatggt catagctgtt tcctgtgtga aattgttatc cgctcacaat
3061 tccacacaac atacgagccg gaagcataaa gtgtaaagcc tggggtgcct aatgagtgag
3121 ctaactcaca ttaattgcgt tgcgctcact gcccgctttc cagtcgggaa acctgtcgtg
3181 ccagctgcat taatgaatcg gccaacgcgc ggggagaggc ggtttgcgta ttgggcgctc
3241 ttccgcttcc tcgctcactg actcgctgcg ctcggtcgtt cggctgcggc gagcggtatc
3301 agctcactca aaggcggtaa tacggttatc cacagaatca ggggataacg caggaaagaa
3361 catgtgagca aaaggccagc aaaaggccag gaaccgtaaa aaggccgcgt tgctggcgtt
3421 tttccatagg ctccgccccc ctgacgagca tcacaaaaat cgacgctcaa gtcagaggtg
3481 gcgaaacccg acaggactat aaagatacca ggcgtttccc cctggaagct ccctcgtgcg
3541 ctctcctgtt ccgaccctgc cgcttaccgg atacctgtcc gcctttctcc cttcgggaag
3601 cgtggcgctt tctcatagct cacgctgtag gtatctcagt tcggtgtagg tcgttcgctc
3661 caagctgggc tgtgtgcacg aacccccccgt tcagcccgac cgctgcgcct tatccggtaa
3721 ctatcgtctt gagtccaacc cggtaagaca cgacttatcg ccactggcag cagccactgg
3781 taacaggatt agcagagcga ggtatgtagg cggtgctaca gagttcttga agtggtggcc
3841 taactacggc tacactagaa gaacagtatt tggtatctgc gctctgctga agccagttac
3901 cttcggaaaa agagttggta gctcttgatc cggcaaacaa accaccgctg gtagcggttt
3961 ttttgtttgc aagcagcaga ttacgcgcag aaaaaaagga tctcaagaag atcctttgat
4021 cttttctacg gggtctgacg ctcagtggaa cgaaaactca cgttaaggga ttttggtcat
4081 gagattatca aaaaggatct tcacctagat ccttttaaat taaaaatgaa gttttaaatc
4141 aatctaaagt atatatgagt aaacttggtc tgacagttac caatgcttaa tcagtgaggc
4201 acctatctca gcgatctgtc tatttcgttc atccatagtt gcctgactcc ccgtcgtgta
4261 gataactacg atacgggagg gcttaccatc tggccccagt gctgcaatga taccgcgaga
4321 cccacgctca ccggctccag atttatcagc aataaaccag ccagccggaa gggccgagcg
4381 cagaagtggt cctgcaactt tatccgcctc catccagtct attaattgtt gccgggaagc
4441 tagagtaagt agttcgccag ttaatagttt gcgcaacgtt gttgccattg ctacaggcat
4501 cgtggtgtca cgctcgtcgt ttggtatggc ttcattcagc tccggttccc aacgatcaag
4561 gcgagttaca tgatccccca tgttgtgcaa aaaagcggtt agctccttcg gtcctccgat
4621 cgttgtcaga agtaagttgg ccgcagtgtt atcactcatg gttatggcag cactgcataa
4681 ttctcttact gtcatgccat ccgtaagatg cttttctgtg actggtgagt actcaaccaa
4741 gtcattctga gaatagtgta tgcggcgacc gagttgctct tgcccggcgt caatacggga
4801 taataccgcg ccacatagca gaactttaaa agtgctcatc attggaaaac gttcttcggg
4861 gcgaaaactc tcaaggatct taccgctgtt gagatccagt tcgatgtaac ccactcgtgc
4921 acccaactga tcttcagcat cttttacttt caccagcgtt tctgggtgag caaaaacagg
4981 aaggcaaaat gccgcaaaaa agggaataag ggcgacacgg aaatgttgaa tactcatact
5041 cttccttttt caatattatt gaagcattta tcagggttat tgtctcatga gcggatacat
5101 atttgaatgt atttagaaaa ataaacaaat aggggttccg cgcacatttc cccgaaaagt
5161 gccacctgac gtc

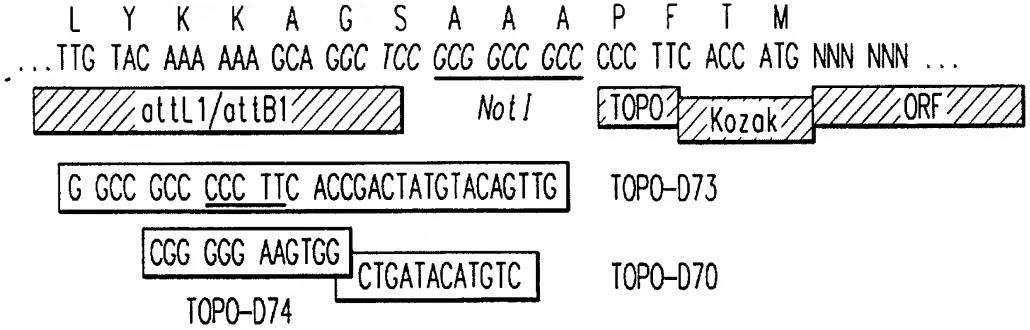
FIG.25C

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt No. 0942.534002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

pENTR/SD-dTopo: 5' END



pENTR-dTOPO AND pcDNAGW-dTOPO: 5' END



pENTR/SD-dTOPO, pENTR-dTOPO, AND pcDNAGW-dTOPO: 3' END

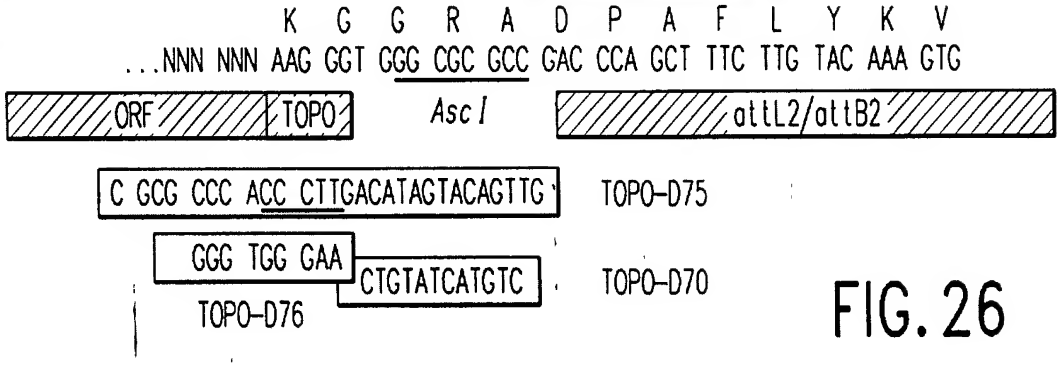


FIG. 26

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s). Chesnut *et al.*; Tel. 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

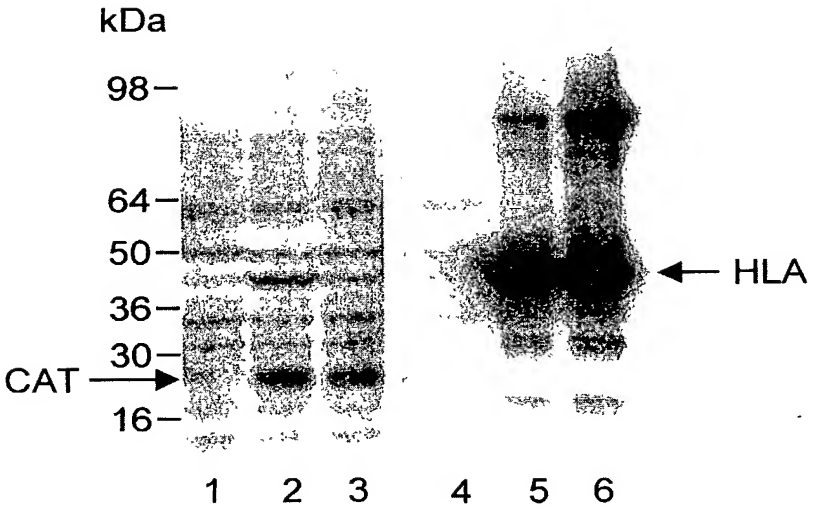


FIG.27

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel. 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

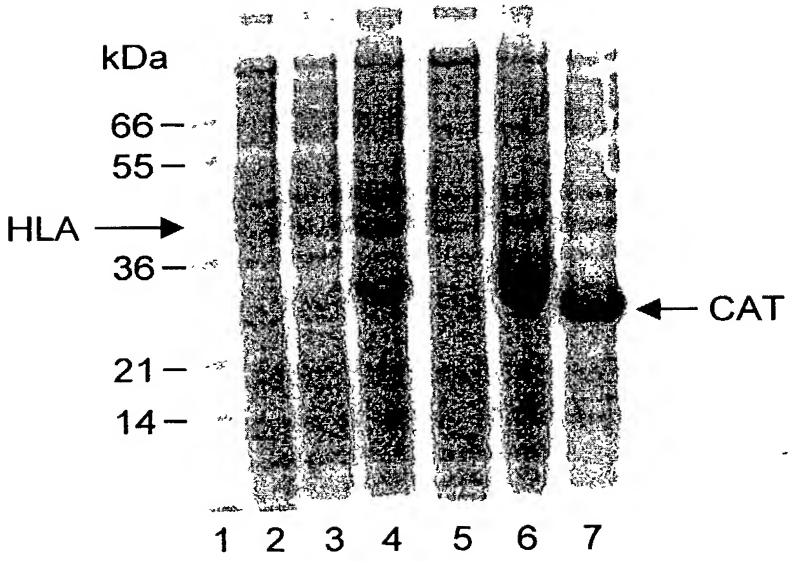


FIG.28

Appl. No 10/005,876, Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s). Chesnut *et al* , Tel· 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid. .

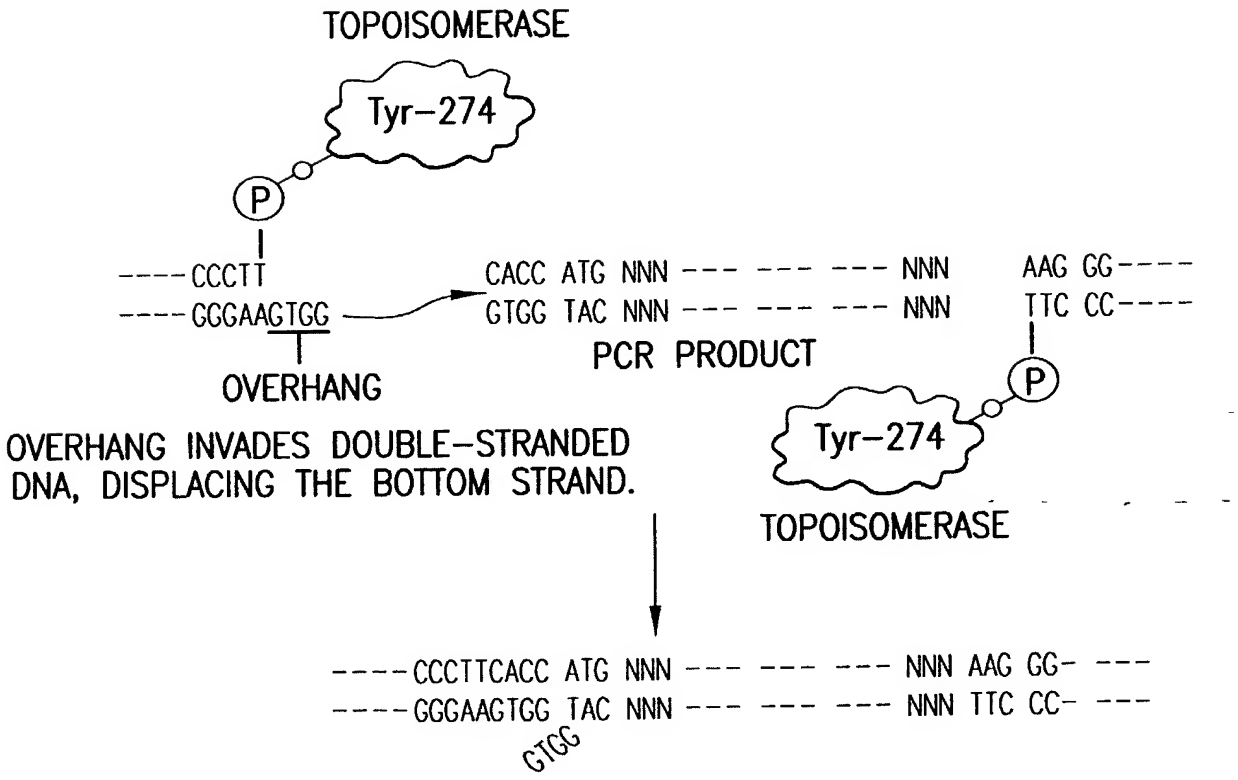
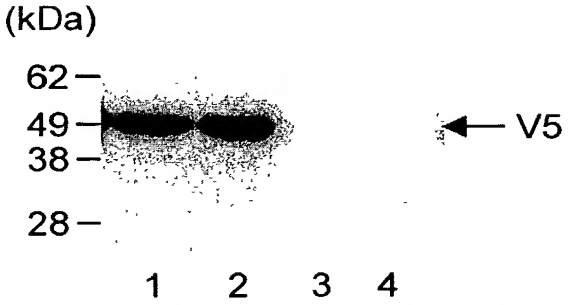


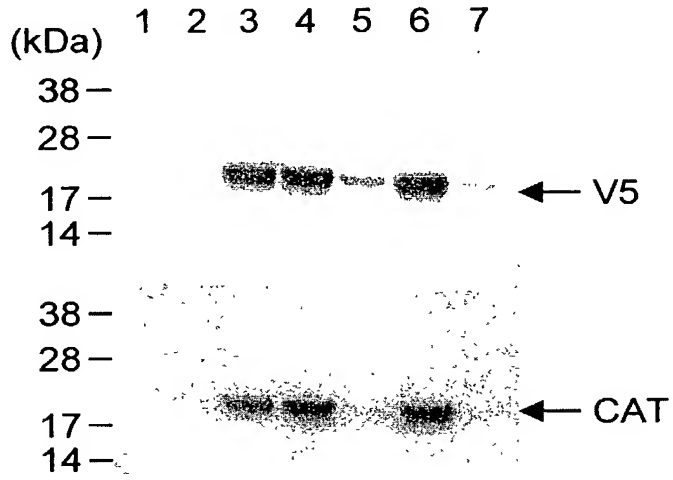
FIG. 29

Appl. No. 10/005,876; Filed: December 7, 2001 10005876 . 070802
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s). Chesnut *et al.*; Tel. 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...



Lane 1: pCMVTetO/CAT/V5TKpA (without secondary PCR) + Tet
Lane 2: pCMVTetO/CAT/V5TKpA (with secondary PCR) + Tet
Lane 3: pCMVTetO/CAT/V5TKpA (with secondary PCR) - Tet
Lane 4: pCMVTetO/CAT/V5TKpA (without secondary PCR) - Tet

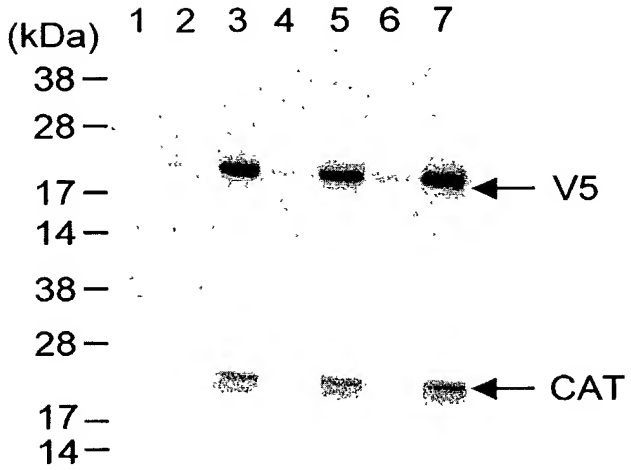
FIG.30A



Lane 1: TRex-CHO Cells + Tet
Lane 2: without secondary PCR (with purified CAT) - Tet
Lane 3: without secondary PCR (with purified CAT) + Tet
Lane 4: without secondary PCR (with unpurified CAT) + Tet
Lane 5: without secondary PCR (with unpurified CAT) -Tet
Lane 6: with secondary PCR + Tet
Lane 7: with secondary PCR - Tet

FIG.30B

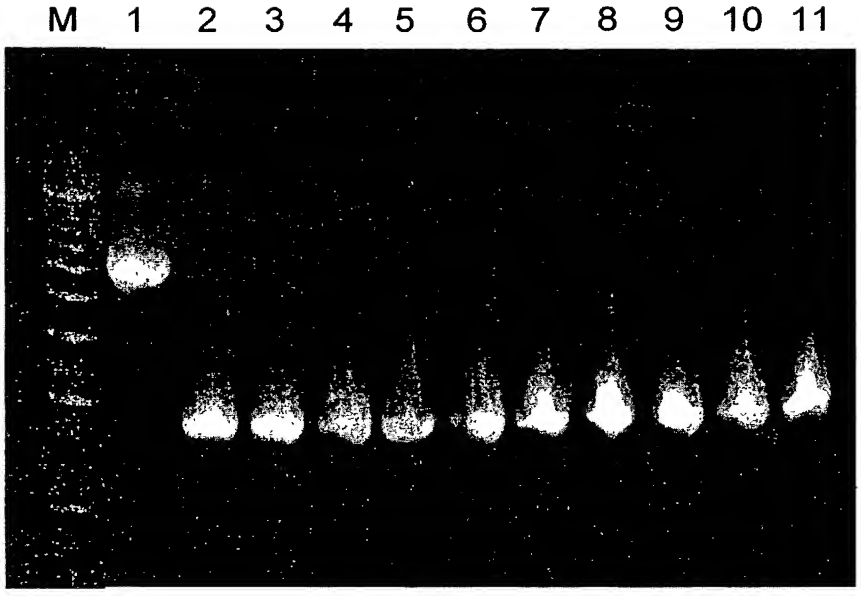
Appl. No 10/005,876; Filed: December 7, 2001 10005876 . 070802
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*, Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...



Lane 1: TRex-293 Cells + Tet
Lane 2: without secondary PCR (with purified CAT) - Tet
Lane 3: without secondary PCR (with purified CAT) + Tet
Lane 4: without secondary PCR (with unpurified CAT) - Tet
Lane 5: without secondary PCR (with unpurified CAT) +Tet
Lane 6: with secondary PCR - Tet
Lane 7: with secondary PCR + Tet

FIG.30C

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD, Group Art Unit: 1645
Inventor(s): Chesnut *et al* ; Tel· 202/371-2600
Title· Method and Compositions for Synthesis of Nucleic Acid...



Lane 1: negative control; lanes 2-11: test clones; M: 500 bp marker

FIG.31

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid. .

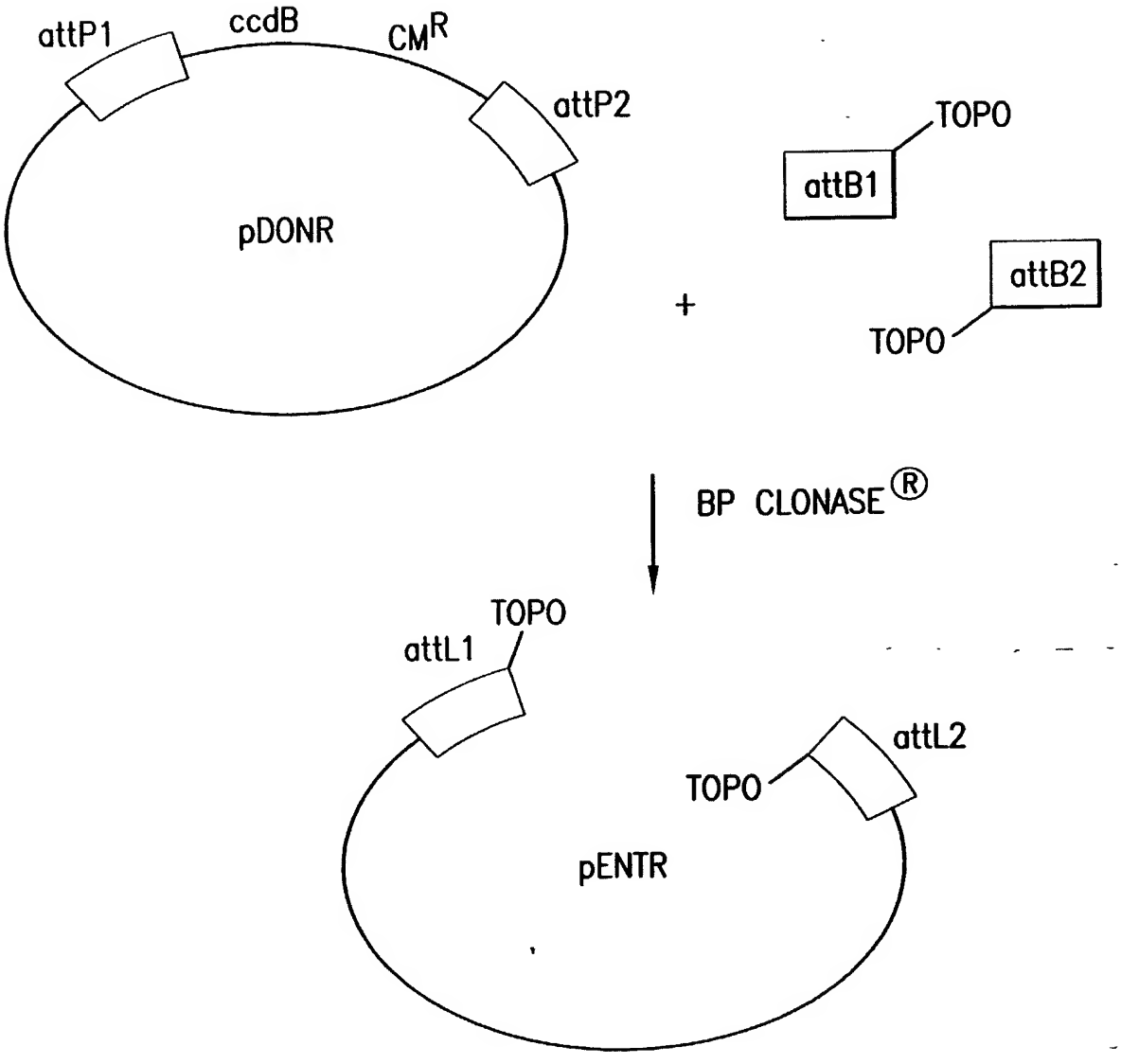


FIG. 32

Appl. No 10/005,876; Filed December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel 202/371-2600
Title. Method and Compositions for Synthesis of Nucleic Acid...

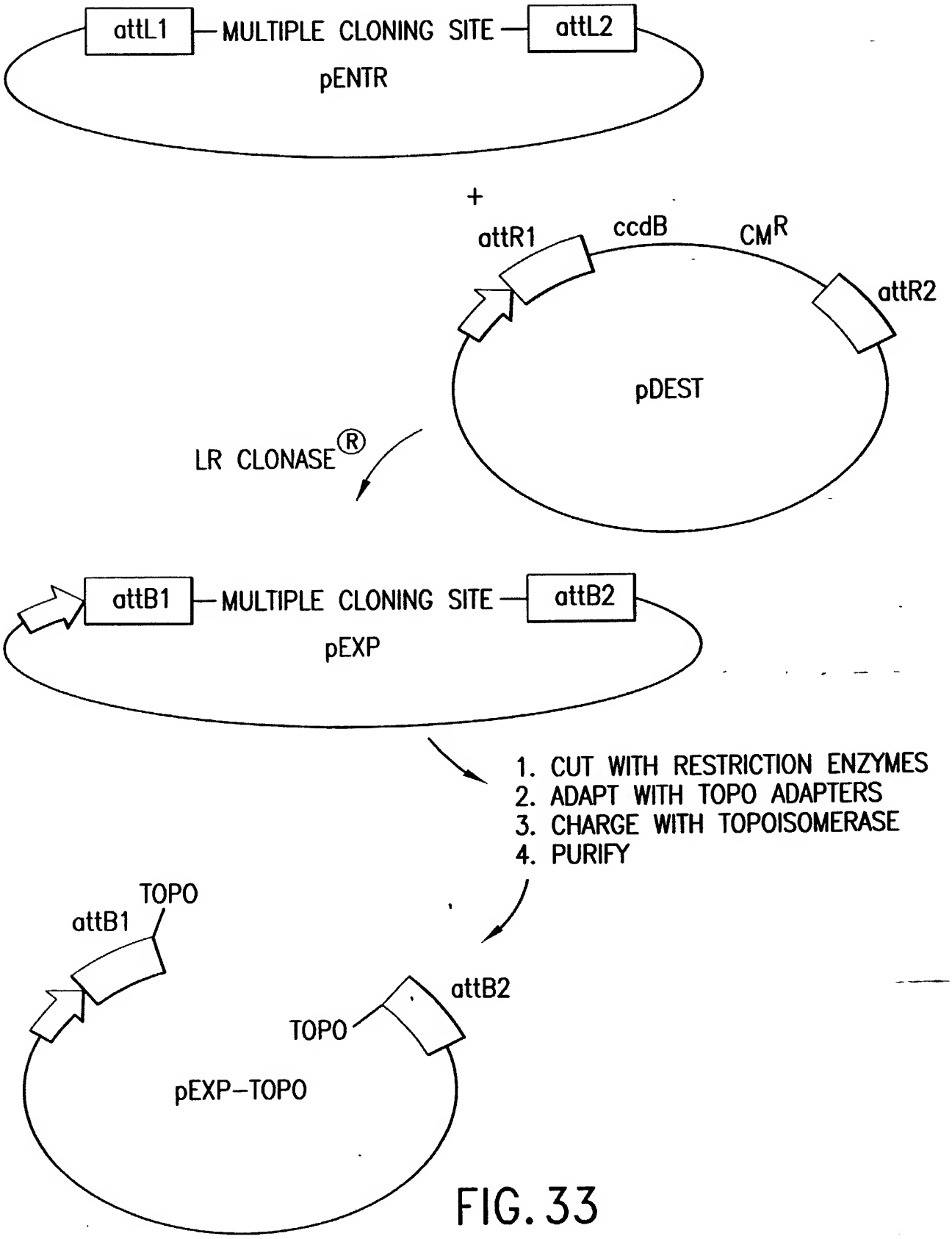


FIG. 33

Appl. No. 10/005,876, Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid.

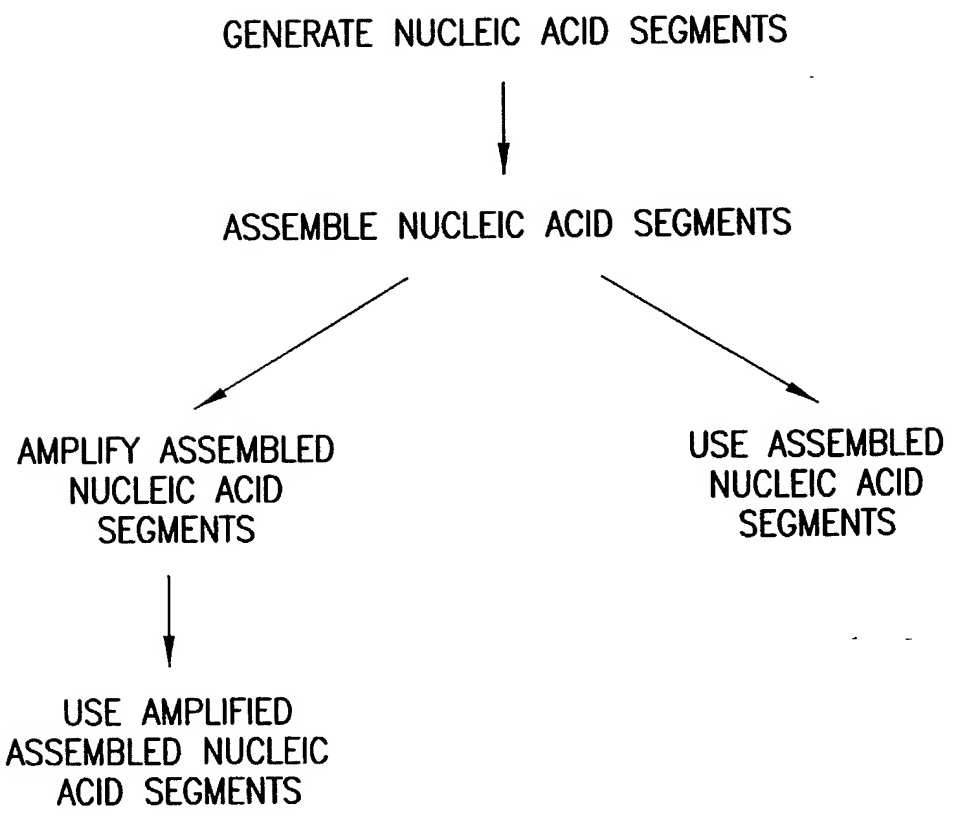


FIG. 34

Appl No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al* ; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

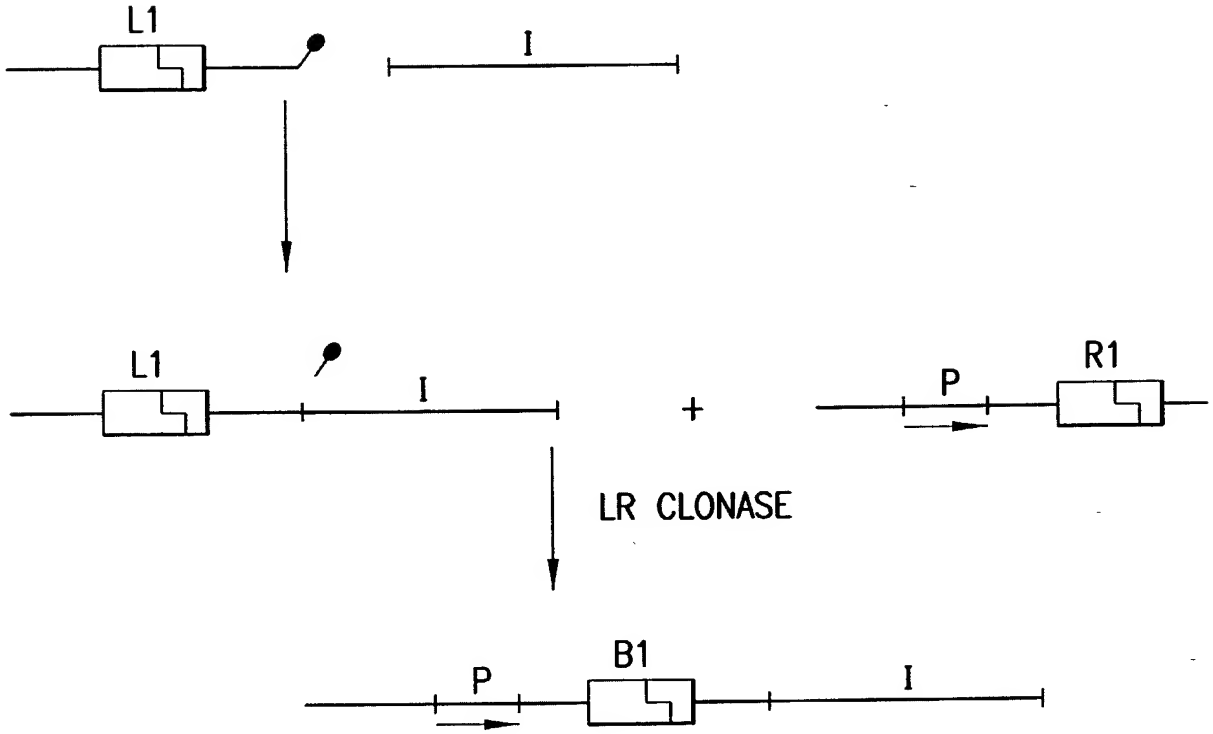


FIG. 35

Appl. No. 10/005,876; Filed. December 7, 2001
Dkt. No. 0942 5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

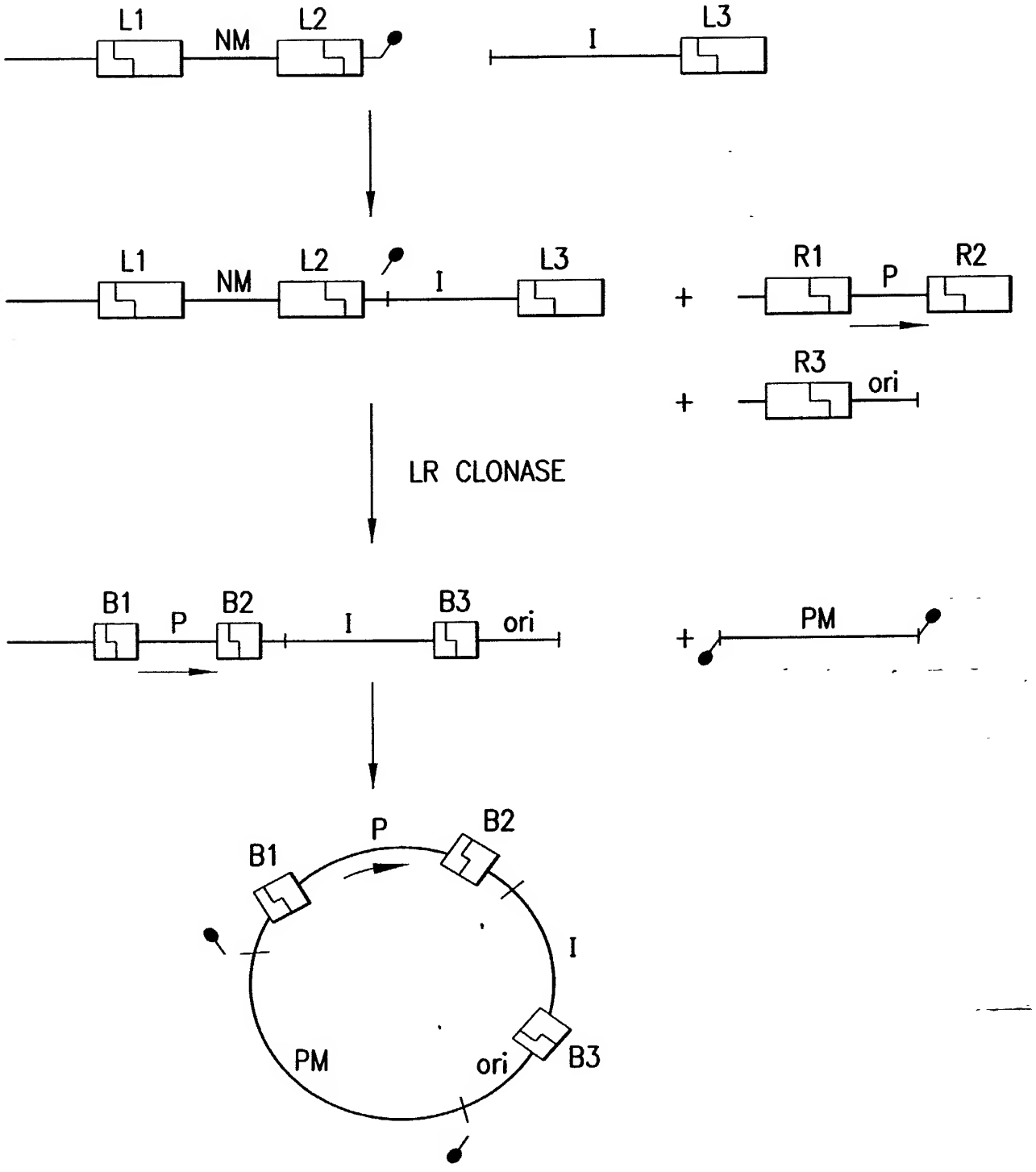


FIG. 36

10005876 - 070802
Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

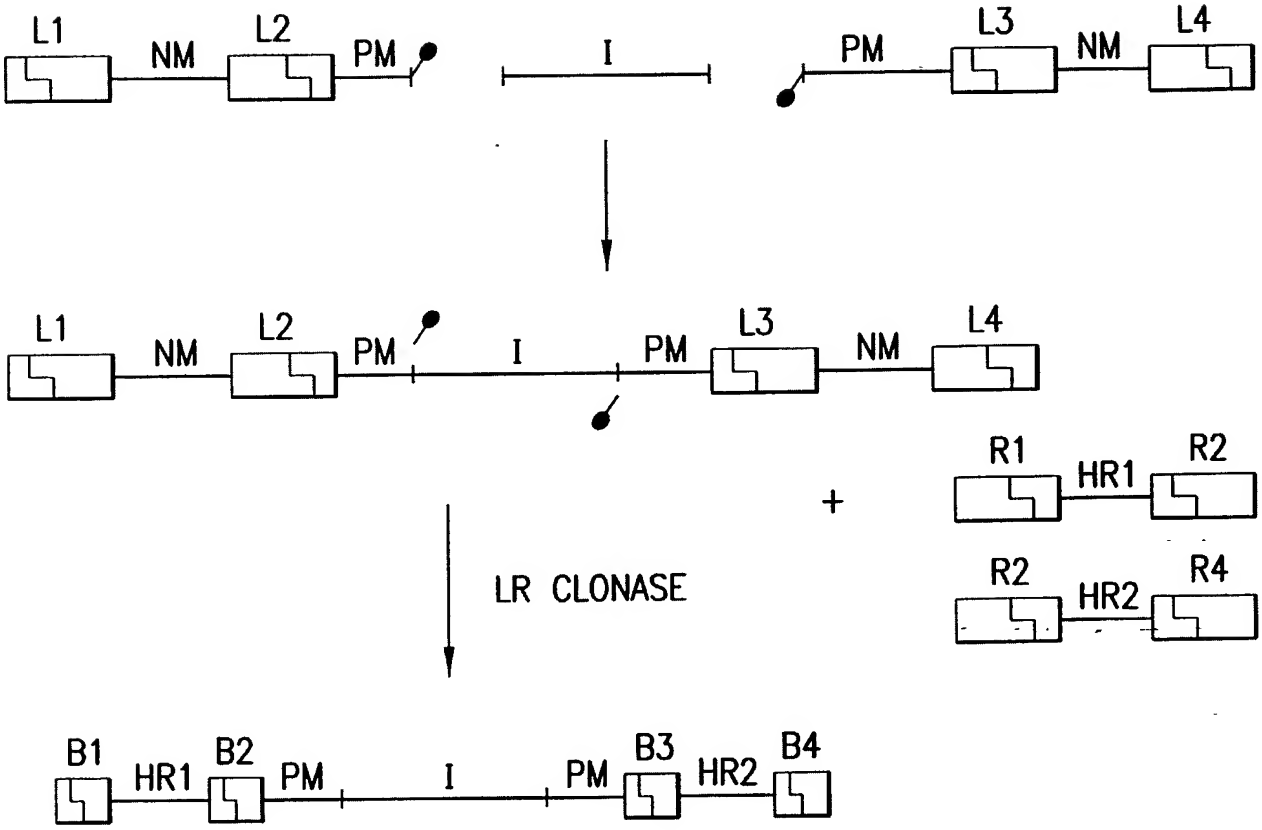


FIG. 37

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

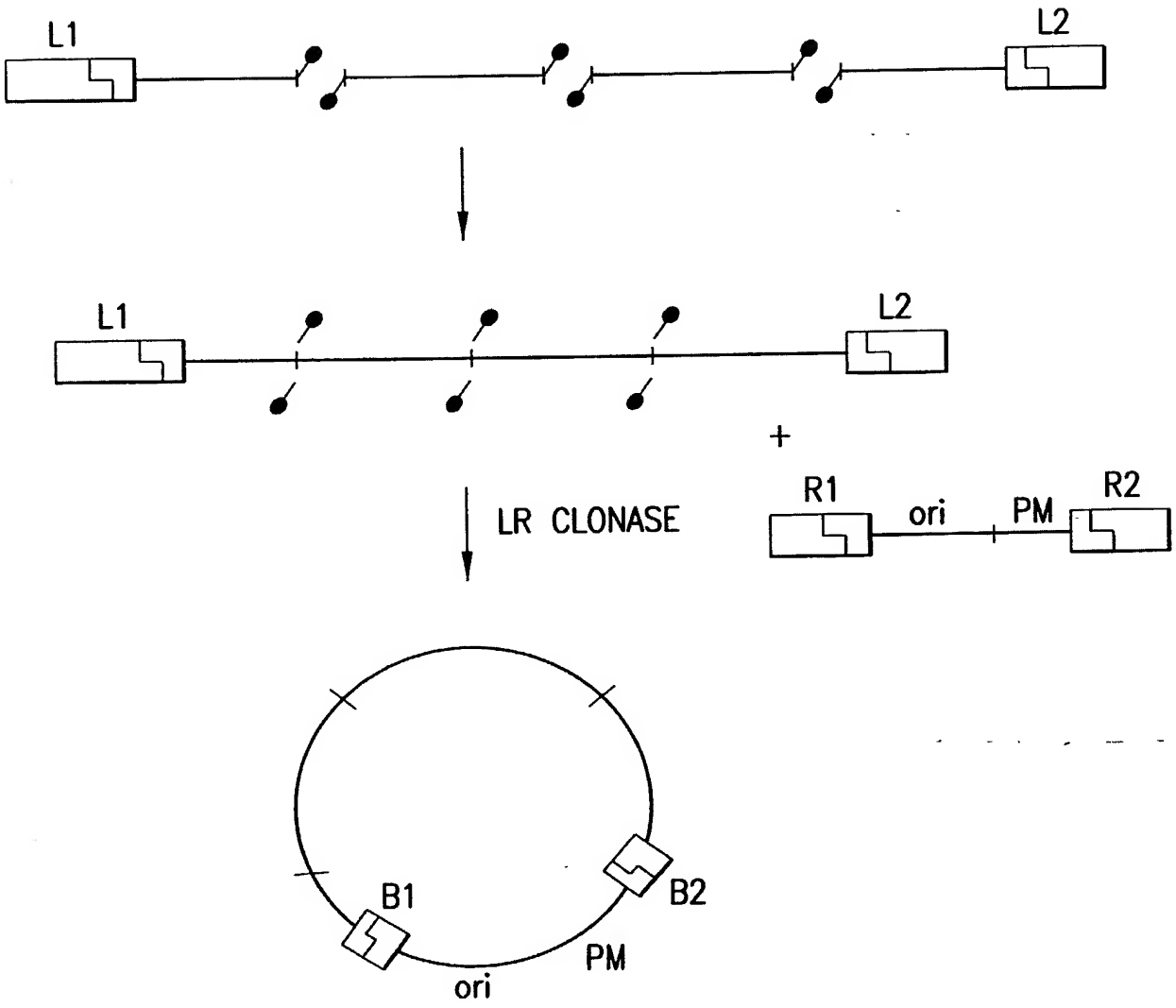


FIG. 38

Appl. No. 10/005,876; Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit. 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid...

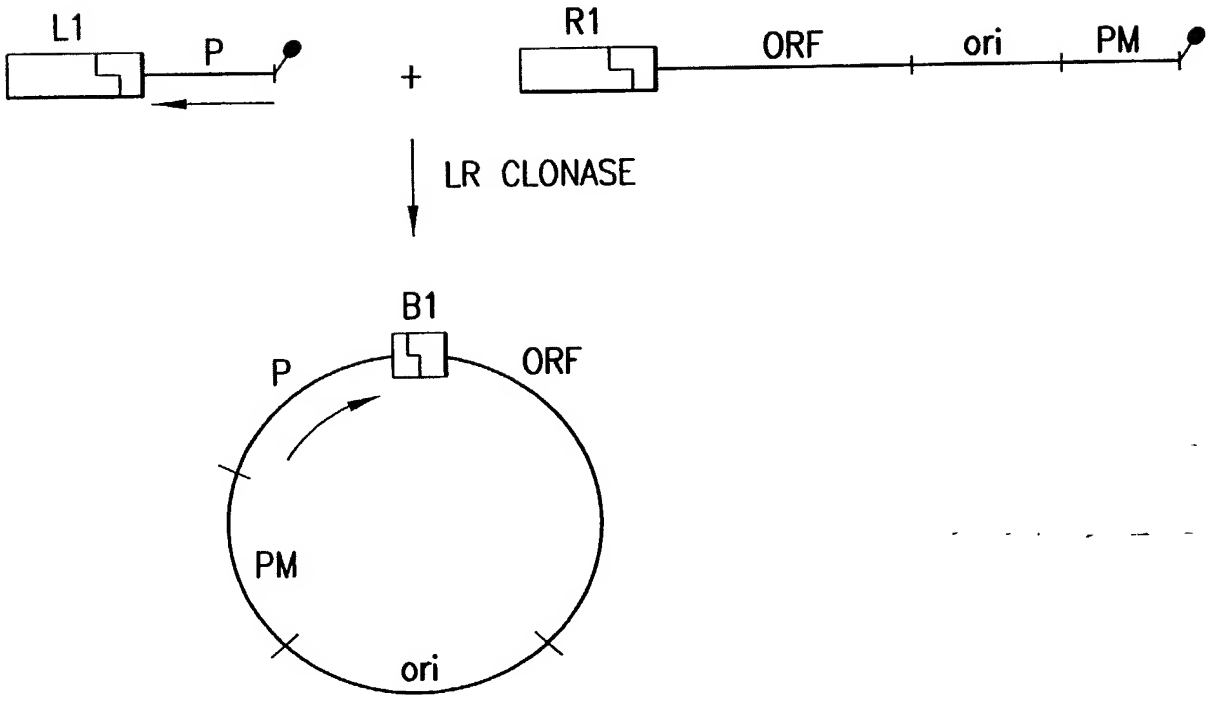


FIG. 39

Appl. No. 10/005,876, Filed: December 7, 2001
Dkt. No. 0942.5340002/RWE/BJD; Group Art Unit: 1645
Inventor(s): Chesnut *et al.*; Tel: 202/371-2600
Title: Method and Compositions for Synthesis of Nucleic Acid.

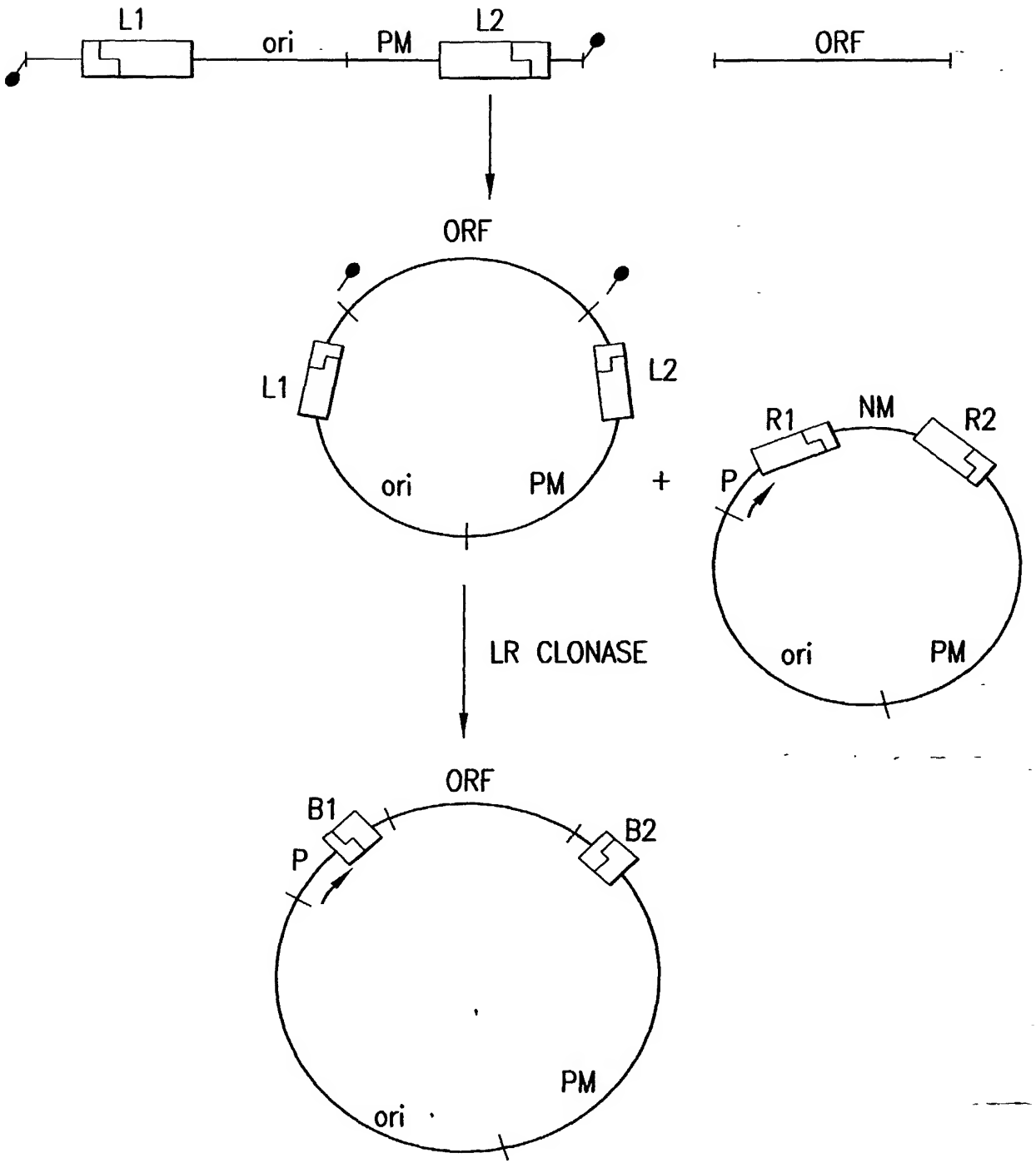


FIG. 40